United States Department of the Interior
Bureau of Land Management
Safford Field Office
Safford, AZ

Environmental Assessment
DOI-BLM-AZ-G010-2013-0019-EA

Ash Peak Permit Renewal

Contents

1.0 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the proposed grazing permit renewal for the Ash Peak Allotment # 51050 (Fig. 1). The action culminates an evaluation conducted on the allotment under the Arizona Bureau of Land Management (BLM) Standards for Rangeland Health and Guidelines for Grazing Management (S&Gs). In addition, this EA determines if current grazing management practices would maintain desirable conditions and continue to allow improvement of public land resources, or whether changes in grazing management for the allotments are necessary. This EA is intended to evaluate the findings of the S&G evaluations as they relate to vegetation conditions and resource values in the allotments. This is done in an effort to balance demands placed on the resources by various authorized uses within the allotments. It was determined by the Interdisciplinary Assessment Team (IAT), during the assessment process, that resource conditions on the Ash Peak Allotment are meeting the applicable Standards for Rangeland Health. This EA is intended to be used with the Ash Peak Allotment Evaluation & Rangeland Health Analysis (Appendix 1).

1.1 Background

The Ash Peak Allotment # 51050 was evaluated through the Standards and Guideline process. The BLM completed Rangeland Health Assessments (RHA) on the Ash Peak Allotment on November 13th, 2008 and April 24th, 2013. On February 28, 2005, the Ash Peak permit was issued under the Appropriations Act with the following language: "In accordance with Sec. 325, Title III, H.R. 2691, Department of the Interior and related agencies Appropriations Act, 2004 (P.L. 108-108), which was enacted on November 10, 2003, this grazing permit is renewed under Section 402 of the Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1752), Title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C. 1010 ET SEQ.), or, if applicable, Section 510 of the California Desert Protection Act (16 U.S.C. 410AAA-50). In accordance with Public Law 108-108," the terms and conditions contained in the expired or transferred permit shall continue in effect under the renewed permit until such time as the Secretary of the Interior completes processing of this permit in compliance with all applicable laws and regulations, at which time this permit or lease may be cancelled, suspended, modified, in whole or part, to meet the requirements of such applicable laws and regulations."

On September 11, 2012, a proposed decision to renew the Ash Peak permit based on a Documentation of NEPA Adequacy was protested. As a result of that protest, additional review of the proposed management was completed and subsequent RHA and monitoring were completed in 2013.

1.2 Purpose and Need

The purpose of this action is to provide for livestock grazing opportunities on public lands where consistent with meeting management objectives, including the Arizona Standards for Rangeland Health and Guidelines for Livestock Grazing Management.

The need for this action is established by the Taylor Grazing Act (TGA), the Federal Land Policy and Management Act (FLPMA), and the Safford District (SD) Resource Management Plan (RMP) (USDI BLM, 1999), which requires that the BLM respond to applications to fully process and renew permits to graze livestock on public land. In detail, the analysis of the actions identified in the applications for grazing permit renewals and the alternative actions is needed because:

- BLM Arizona adopted the Arizona Standards for Rangeland Health (Land Health Standards) and Guidelines for Livestock Grazing Management in all Land Use Plans (Arizona S&Gs) in 1997 (Appendix A). Land Health Standards and Guidelines for Grazing Administration were also incorporated into the SD RMP (1991, 1993). Land Health Standards for Rangelands should be achieving or making significant progress towards achieving the standards and to provide for proper nutrient cycling, hydrologic cycling, and energy flow. Guidelines direct the selection of grazing management practices and, where appropriate, livestock facilities to promote significant progress toward, or the attainment and maintenance of, the standards. Rangeland health assessments and evaluation reports have been completed for the Ash Peak Allotment, and all standards were being met.

- The SD RMP identifies resource management objectives and management actions that establish guidance for managing a broad spectrum of land uses and allocations for public lands in the Safford Field Office. The SD RMP allocated public lands within the White Spring Allotment as available for domestic livestock grazing. Where consistent with the goals and objectives of the RMP and Land Health Standards, allocation of forage for livestock use and the issuance of grazing permits to qualified applicants are provided for by the Taylor Grazing Act (TGA) and the Federal Land Policy and Management Act (FLPMA).

1.3 Decision to be made

The Safford Field Manager is the authorized officer responsible for the decisions regarding management of public lands within this allotment. Based on the results of the NEPA analysis, the authorized officer will issue a determination of the significance of the environmental effects and whether an environmental impact statement (EIS) would be required. If the authorized officer determines that it is not necessary to prepare an EIS, the EA will provide information for the authorized officer to make an informed decision whether to renew, renew with modifications, or not renew the permit and if renewed, which management actions, mitigation measures, and monitoring requirements will be prescribed for the Ash Peak Allotment to ensure management objectives and Arizona Standards for Rangeland Health are achieved.

1.4 Conformance with Land Use Plan

The proposed action is in conformance with the Safford Resource Management Plan (RMP) (1991) and the Statewide Land Use Plan Amendment for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration 1997. Arizona's Standards and

Guides were developed through a collaborative process involving the Arizona Resource Advisory Council and the Bureau of Land Management State Standards and Guidelines team. The Secretary of the Interior approved the Standards and Guidelines in April 1997. The Decision Record, signed by the BLM Arizona State Director (April 1997) provided for full implementation of the Standards and Guides in all Arizona BLM Land Use Plans.

Implementation level decisions from the Upper Gila-San Simon Grazing Environmental Impact Statement (UG-EIS) (BLM 1978) were carried forward into the RMP. Through the above authorizing documents, BLM will continue to issue grazing permits and licenses, implement, monitor and modify allotment management plans and increase or decrease grazing authorizations as determined through the allotment evaluation processes. As necessary, National Environmental Policy Act compliance documents will be prepared prior to any action being implemented. The grazing decisions are incorporated into this Resource Management Plan/Environmental Impact Statement by reference and are common to all alternatives. Management direction pertaining to grazing for this allotment can be found in the Upper Gila-San Simon Grazing Environmental Impact Statement (BLM 1978), Appendix C, p. A-27. All other discipline management objectives pertaining to this allotment can be found in the RMP.

1.4.1 RMP Decision Number and Narrative

CL19 Cultural resources stipulations will be included on all grazing leases and permits. UG-EIS page 4-2

GM12 The general objective of the proposed action is to permit livestock to use the harvestable surplus of palatable vegetation–a renewable resource–and thereby produce a usable food product. The proposed livestock management program is based on the multiple-use management concept, which provides for the demands of various resource uses and minimizes the conflicts among those uses or activities. Although the various uses of the rangeland resources can be compatible, competition among uses requires constraints and mitigating measures to realize multiple-use resource management goals. The Specific objectives for each grazing unit are shown in appendix C. UG-EIS Page 1-6

GM17 Deviation from the management system could be allowed for circumstances beyond the licensee's control, such as severe drought, but such deviations would require the District Manager's prior authorization UG-EIS Pages 1-8.

GM32 Proper stocking is an essential principle of range management, which should precede or coincide with the initiation of any grazing management system. With stocking rates in balance with the proposed grazing capacities, utilization of key forage species in the key areas would average about 40 percent over a period of years. At a given stocking rate during years of high forage production (e.g. above normal rainfall) utilization in the use pasture might be as low as 20 percent. During years of low forage production utilization could be as high as 60 percent. UG-EIS Page 1-9

VM02 Upland vegetation on public lands within the Safford District will be managed for

watershed protection, livestock use, reduction of non-point source pollution, Threatened and Endangered species protection, priority wildlife habitat, firewood and other incidental human uses. Best management practices and vegetation manipulation will be used to achieve desired plant community management objectives. Treatments may include various mechanical, chemical and prescribed fire methods. RMP page 24 & 45. UG-EIS Partial ROD I page 10.

VM03 Ecological Site Inventories will be combined with the desired plant community concept to develop management objectives for activity plans as they are written or revised. RMP page 45.

VM04 Public lands will be managed to preserve and enhance the occurrences of special status species and to achieve the eventual delisting of threatened and endangered species. RMP page 45.

VM07 Land treatments (vegetation manipulation) will be used to decrease invading woody plants and increase grasses and forbs for; wildlife and livestock forage and watershed condition. Treatment areas will be identified in activity plans. Treatments may include various artificial (mechanical, chemical, or prescribed fire) methods. RMP page 45.

WF02 District management will focus on priority species and their associated habitats to maintain or enhance population levels. Threatened and endangered, proposed, candidate, State-listed and other special status species will be managed to enhance or maintain district population levels or in accordance with established inter/intra-agency management plans. District management efforts will be directed towards the enhancement of biological diversity. UG-EIS ROD Part I page 6.

WF14 Manage habitat for optimum wildlife populations, based on ecological conditions, taking into consideration local, yearly climatic variations. BLM will follow Arizona Game and Fish Department's five-year strategic plans for the various species and will assist the Department in accomplishing its goals for the various species. RMP page 34.

1/ RMP - Safford District Resource Management Plan
2/ UG-EIS - Upper Gila - San Simon Grazing Environmental Statement

1.5 Relationship to Statutes, Regulations or Other Plans or Policies:

Grazing permit renewals are provided for in 43 CFR 4100 where the objectives of the regulations are "....to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning conditions; to promote the orderly use, improvement and development of the public lands; to establish efficient and effective administration of grazing of public rangelands; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public rangelands" (43 CFR 4100.0-2). The proposed action would comply with 43 CFR 4100.0-8 which states, in part, "The authorized officer shall manage livestock grazing on public lands under the principle of multiple use and sustained yield, and in accordance with applicable land use plans." The proposed action also complies with 43 CFR 4130.2(a) which states, in part, "Grazing permits or leases shall be issued to qualified applicants to authorize use on the public

lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans". The proposed action is consistent with the Fundamentals of Rangeland Health (43 CFR 4180.1) and Arizona's Standards and Guidelines, which were developed through a collaborative process involving the Arizona Resource Advisory Council and the BLM State Standards and Guidelines team. The Secretary of the Interior approved the Standards and Guidelines in April 1997. These standards and guidelines address watersheds, ecological condition, water quality, and habitat for special status species. These resources are addressed later in this document. The proposed action conforms to the President's National Energy Policy and would not have adverse energy impacts. The proposed action would not deny energy projects, withdraw lands, close roads, or in any other way deny or limit access to mineral materials to support energy actions. The regulations at 43 CFR Part 10 specifically require land use authorizations, including leases and permits, to include a requirement for the holder of the authorization to notify the appropriate Federal official immediately upon the discovery of human remains and other items covered by the Native American Graves Protection and Repatriation Act (see 43 CFR 10.4(g); the actual requirement for persons to notify the Federal agency official and protect the discovery is in 43 CFR 10.4(b) and (c). Executive Order 13186 requires the BLM and other Federal agencies to work with the USFWS to provide protection for migratory birds. Implementation of the proposed action is not likely to adversely affect any species of migratory bird known or suspected to occur on the allotments.

The proposed action would comply with the following laws and/or agency regulations, and are consistent with applicable Federal, state and local laws, regulations, and plans to the maximum extent possible.

- Taylor Grazing Act (TGA) of 1934
- Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.)
- Public Rangelands Improvement Act (PRIA) of 1978
- Endangered Species Act (ESA) of 1973, as amended
- 43 CFR 4100 Grazing Administration - Exclusive of Alaska
- Arizona Water Quality Standards, Revised Statute Title 49, Chapter II
- Section 106 of the National Historic Preservation Act of 1966, as amended
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-3013; 104 Stat. 3048-3058)
- National Environmental Policy Act (NEPA) of 1969
- Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds

1.6 Scoping

Scope of Issues: The CEQ defines scoping as "…an early and open process for determining the scope of issues to be addressed and for identifying significant issues related to a proposed action" (40 CFR 1501.7). Scoping is an important underpinning of the NEPA process that encourages public input and helps focus the environmental impact analysis on relevant issues. Distribution of scoping information typically heralds the beginning of the public component of the NEPA

process. To encourage public participation, BLM mailed scoping information regarding the Ash Peak permit renewal proposal to interested individuals, organizations, and agencies on June 12, 2012. BLM received one letter of comment during the scoping period.

Key Issues: Several environmental issues concerning the proposed project were identified by the NEPA interdisciplinary team members and from the public comments during scoping.

1.6.1 Issues Identified

- What are the potential impacts of the no grazing alternative on wildlife water?
- What are the potential impacts of the no grazing alternative on livestock operations?

2.0 Proposed Action and Alternatives

2.1 Proposed Action (No Action): Issue Grazing Permit

The proposed action would be to renew the grazing permit for Ash Peak for a period of ten years as authorized by the grazing regulations at §4130.2(d) with the same mandatory terms and conditions as the current permit (Table 1).

Table 1: Mandatory terms and conditions.

Allotment	Livestock number	Kind	Grazing Period Begin	End	Type %PL	Type Use	Active AUMS
5105	92	Cattle	03/01	02/28	87	Active	960

Annual Meetings: When large changes are identified in monitoring data, an annual meeting between BLM and the grazing permittee would be conducted to discuss previous years monitoring and the coming year's grazing schedule. Emergency situations would be handled on a case by case basis and would involve consultation with the above parties. The final decisions concerning the annual meeting recommendations and moves outside the scheduled use periods would be made by the authorized officer.

Flexibility: When drought is declared by the authorized officer, permittees are contacted and educated on consequences of drought on forage production. The permittee is also reminded of the upper limit of utilization. Permittees are: 1.) encouraged to voluntarily reduce numbers 2.) if drought continues, permittees can be required to remove all cattle under a voluntary agreement or full force and effect decision.

2.2 No Grazing Alternative

This alternative would remove grazing as an authorized activity on the Ash Peak Allotment. This alternative would cancel the permit on the Ash Peak Allotment. Under this alternative, BLM would initiate the process in accordance with the 43 CFR parts 4100 and 1600 to eliminate grazing on the allotment and amend the resource management plan.

2.3 Alternatives Considered but Eliminated From Detailed Analysis

Additional herbicide treatments of creosote bush on the Ash Peak allotment were discussed; however, these treatments would not respond to the purpose and need and could not be practically implemented on the Ash Peak allotment.

No other alternatives were identified during scoping that would respond to the purpose and need and could be practically implemented on the Ash Peak allotment.

3.0 Affected Environment

The Ash Peak allotment is in Graham and Greenlee counties, approximately seven miles west of Duncan, Arizona and south of Highway 70. Elevation ranges from 5200' (Flat Top) to 3800' (Whitlock Valley).

The BLM is required to consider many authorities when evaluating a Federal action. Those elements of the human environment that are subject to the requirements specified in statutes, regulations, or executive orders, and must be considered in all EAs, have been considered by BLM resource specialists to determine whether they would be potentially affected by the proposed action. These elements are identified in Table 2, along with the rationale for the determination on potential effects. If any element was determined to be potentially impacted, it was carried forward for detailed analysis in this EA; if an element is not present or would not be affected, it was not carried forward for analysis. Table 2 also contains other resources/concerns that have been considered in this EA. As with the elements of the human environment, if these resources were determined to be potentially affected, they were carried forward for detailed analysis in this document.

Figure 1. Map of Ash Peak Allotment (DOI-BLM-AZ-G010-0019-EA).

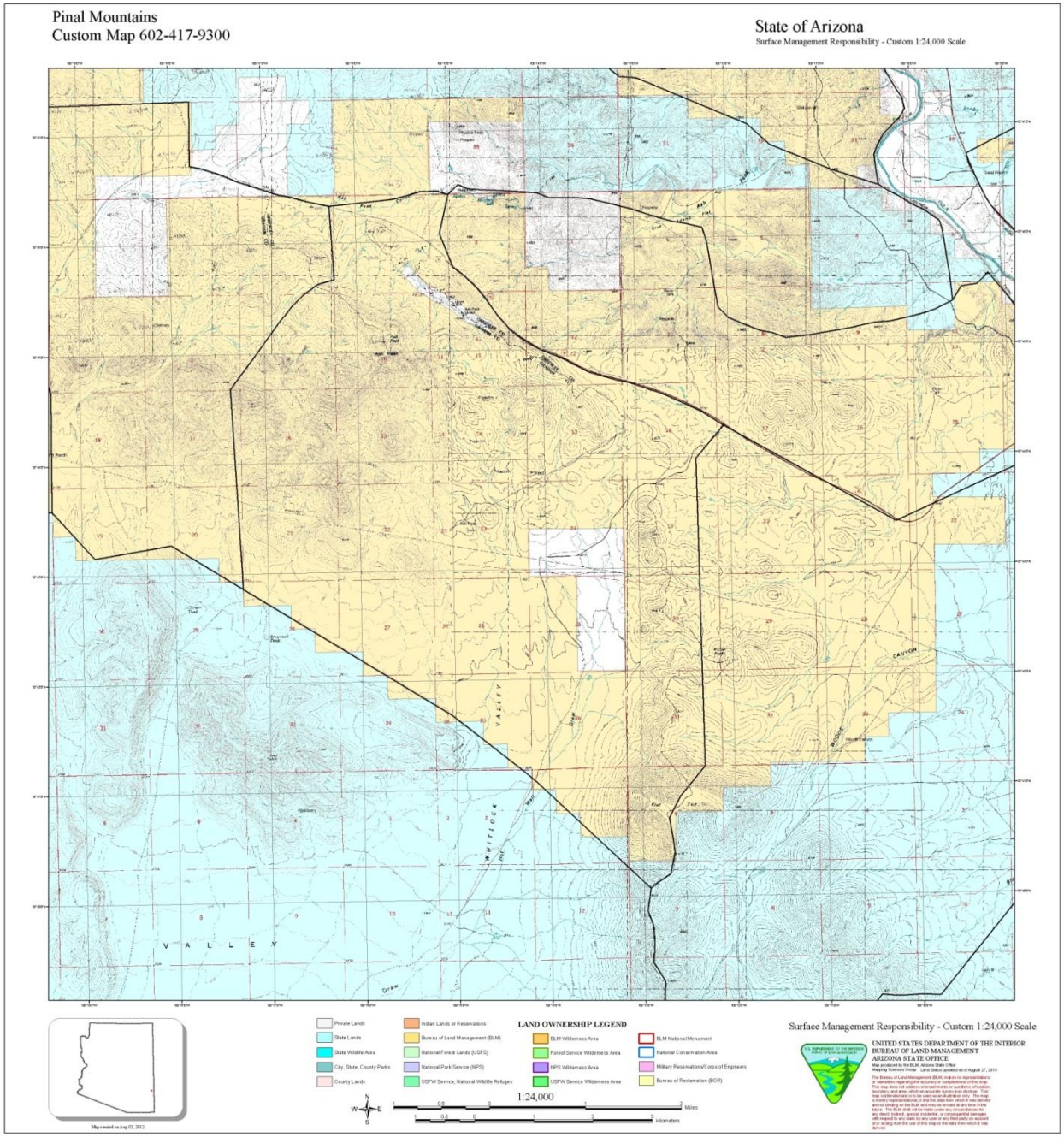

Table 2. Summary evaluation of elements/resources of the human environment.

Resource	Determination*	Affected Environment (Rationale for Determination)
* NP = Not present in the area that will be impacted by the proposed action. NI = Present, but not affected to a degree that would mean detailed analysis is required. PI = Present with potential for impact; analyzed in detail in the EA.		
Areas of Critical Environmental Concern	NP	The proposed action would not affect this element as no ACECs are within or adjacent to the proposed area.
Air Quality	NI	Moving livestock could produce small amounts of fugitive dust in the short term, but this would cause negligible and localized impacts on air quality. No long-term adverse effects are expected from the proposed or alternative action.
Cultural Resources	NP	The proposed action would not affect this element, as no historic properties were found in areas of cattle congregation. A Cultural Resource Compliance Documentation Record (Project No. AZ-410-09-011) was completed 17 March 2009 by Safford Field Office. Allotment case files, AMP files, range project files, Water Source Inventory files and Cultural Resource files were reviewed.
Environmental Justice	NP	The closest community is Duncan, Arizona, approximately eight miles from the Ash Peak allotment. No aspect of the proposed action or the no grazing alternative would have no disproportionately high or adverse human health or other environmental effects on minority or low-income segments of the populations as defined by Executive Order 12898**.**
Farmlands (Prime or Unique)	NP	There are no prime or unique farmlands within or near the project area; therefore, there would be no direct, indirect, or cumulative impacts to this critical element.
Floodplains	NP	The Ash Peak allotment is outside of any designated floodplain; therefore, there would be no direct, indirect, or cumulative impacts to this critical element.
Invasive and Nonnative Species	NI	There are currently no known invasive species or noxious weeds located on the Ash Peak allotment. Since there are no known invasive or nonnative species that have been established on the allotment to date from livestock grazing, the risk of establishment is thought to be low with the proposed or no grazing alternative.
Livestock Grazing	PI	The Ash Peak allotment was evaluated in 2013 and is meeting all Rangeland Health Assessment standards for the Volcanic Hills (AP-02) and Limy Uplands (AP-06) evaluation sites. No change in management, e.g. increase in AUMs are proposed. No impacts of the proposed action are anticipated. Under the no grazing alternative, the Bureau would have to fence the non-grazed public land from the state land grazing allotment. The Bureau would have to purchase the permittees vested value in range improvements and determine whether to maintain or abandon them.
Native American Religious Concerns	NP	During consultations with American Indian Tribes who claim cultural affiliation to southern Arizona, no Native American religious concerns have been identified in relation to actions proposed in this EA.
Socioeconomic Values	NI	The small farming community of Duncan is just outside the allotment boundaries. Under the proposed action, the permittees would continue running a livestock operation on the allotment. The permittee would continue to contribute in a small way to the economy of the local community. In addition, the county would continue to receive the allotment proportion of in lieu taxes. Therefore, the proposed action would have no appreciable effect on the economy or social aspect of the region.

Resource	Determination*	Affected Environment (Rationale for Determination)
Soils	NI	Limy Upland Reference Sheet for Attribute # 8, Soil Surface Resistance to Erosion, has an average value for soil slake test of 3, with interspace = 2 and canopy = 4.3. AP-06 had an average of 4.1, with interspace = 3.1 and canopy = 5.1. Volcanic Hills did not have a Reference Sheet but AP-02 had an average soil slake of 3.63. Soil Surface Resistance to Erosion and Soil Surface Loss or Degradation was graded *None to Slight* for both sites. Livestock trails and congregation areas cause soil compaction. These areas are small and isolated and pasture rotation would lessen the impact. Therefore, no long-term adverse effects are expected from the proposed action.
Threatened, Endangered, or Candidate Plant Species	NP	No threatened, endangered, or candidate species are known to occur on the allotment; therefore, there would be no direct, indirect, or cumulative impacts to this critical element.
Threatened, Endangered Animal Species	NI	The Safford Field Office implements its grazing program consistent with the Biological Opinion (BO) rendered on the Gila District Livestock Grazing Program for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (22410-2006-F-0414). This BO was reviewed to insure that all mitigation measures and stated in the BO are being followed. No issues were identified from this review.
Visual Resource Management	NI	The proposed action would not impact VRM.
Wastes (hazardous or solid)	NP	There are no hazardous or solid wastes within the project area and no direct, indirect, or cumulative impacts on this critical element would occur.
Water Quality (Surface, Ground, Drinking)	NP	Due to the lack of surface water within the Ash Peak allotment, water quality would not be impacted to a degree that would be measurable from natural background water quality estimates.
Wetlands/Riparian Zones	NP	Executive Order 11990, Protection of Wetlands, directs federal agencies to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. There are no wetlands or riparian zones within the Ash Peak allotment; therefore, there would be no direct, indirect, or cumulative impacts to this critical element.
Wild and Scenic Rivers	NP	There are no wild and scenic rivers within the project area and no direct, indirect, or cumulative impacts on this critical element would occur.
Wilderness	NP	The project area is not located within designated wilderness; therefore, no direct, indirect, or cumulative impacts on this critical element would occur.
Wilderness Characteristics	NP	The area analyzed within the Ash Peak allotment does not meet the size criteria for wilderness characteristics. Due to not meeting the size criteria, no direct, indirect, or cumulative impacts would occur to wilderness characteristics from the proposed action.
Wildlife and Special Status Species	PI	The Safford Field Office reviewed a list of known Special Status Species occurrences in or within five miles of the Ash Peak allotment provided by the Arizona Game and Fish Department, Heritage Data Management System, on May 1, 2009 (AGFD #M09-04213056) and rechecked July 2012. No species have been documented on the allotment or within five miles that are on the current list of Arizona BLM sensitive species.

3.1 Resources Brought Forward for Analysis

3.1.1 Wildlife

The Ash Peak allotment is comprised of diverse geological forms, elevations, slopes, and vegetation types, directly resulting in a diversity of wildlife species from large mammals such as pronghorn antelope, mule deer, javelina, and an abundance of smaller species, including Gambel's quail, Gila monsters and desert box turtles, to name only a few. As diverse as the habitat is, it could be improved for specific species. Pronghorn antelope have been moving into the area. Grassland habitat and the species dependent on grassland could be improved with an effort to reduce the abundance of shrubs. Wildlife management emphasis in this area is on large game animals, specifically pronghorn, mule deer, and javelina.

Deer: Habitat degradation from excessive herbivore and drought can alter cover and food needed by mule deer. Perennial bunch grasses and low shrubs are required fawning habitat (*i.e.,* cover) for mule deer and offer concealment from predators. Adult animals also require cover for hiding and resting. Hiding or resting locations are selected to provide concealment, a view of the surrounding terrain, and easy access to escape routes.

Deer feed primarily on browse and forbs. Forbs are highly preferred and in spring and summer can comprise 20% to 40% of the annual diet; whereas browse can constitute between 40% to 70% of the diet in fall and winter. Mule deer are selective feeders and would choose the most succulent and nutritious shoots and grasses on which to feed. Diet largely depends on the ecoregion in which they live (Heffelfinger, *et al.,* 2006), in more productive habitats, such as woodland areas, a greater variety of food would be eaten than in desert areas.

Grazing at light to moderate levels has little impact on mule deer since browse and forbs constitute 90% of their diet with grass important only in early spring. Cattle consume primarily grass, with forbs and browse as secondary, but seasonally important components. Overgrazing results in livestock consuming more browse, which exacerbates the level and intensity of competition with mule deer. To reduce this impact, livestock should not be allowed to browse more than 50% of the annual leaders growth (by weight), which equates to approximately 50% of the leaders browsed (Holechek and Galt, 2000).

Disappearance of springs, cienegas, and other natural waters in the southwest due to anthropogenic activities has negatively affected mule deer and other wildlife species (Heffelfinger, *et al*., 2006).

Ash Peak provides good habitat for mule deer. The slopes provide year round habitat, with the lower areas important for seasonal forage and for movement.

Javalina: Like mule deer, javelina inhabit a variety of different habitat types throughout Arizona and are quite adaptable. Javelina are opportunistic feeders and require a diverse plant community comprised of flowers, fruits, nuts, grasses, forbs, shrubs, vines, succulents, and trees for survival. Prickly pear cactus comprises a major portion of their diet. A diverse and intact plant community

not only provides forage, but much needed shelter and cover. Sonoran desert scrub and desert grassland habitat are two of the most important biotic communities in Arizona for javelina and comprise approximately 67% of their range. Javelina do not inhabit pure grasslands, but grasslands that have been invaded by shrubs and cacti. Riparian forests are also important and are used quite frequently by javelina as sources of water, food, and cover (Day, 1985).

Ash Peak provides good habitat for javalina. Javalina evolved in tropical environments and tend to associated with available waters and dense vegetation. They are primarily found around the lower slopes of the allotment.

Pronghorn: Of the larger species of wildlife, pronghorn may be best adapted to coexist with livestock, having evolved with bison. But, excessive herbivore and drought can alter and / or eliminate cover and food. Patches of perennial bunch grasses and low shrubs are required for fawning habitat. In Arizona, pronghorn tend to fawn in close association with water. Adult pronghorn prefer large open areas without visual obstructions. Pronghorn are moving into the allotment from the south.

Pronghorn feed primarily on forbs, followed by shrubs then grasses. Grazing at light to moderate levels has little impact on pronghorn, since browse and forbs constitute most of their diet with grass important only in early spring. Cattle consume primarily grass, with forbs and browse as secondary, but seasonally important, components.

Pronghorn are starting to move into the allotment from the south. Pronghorn habitat occurs in the lowest gentlest terrain on the allotment. The habitat is only fair for pronghorn, given the vegetative dominance of shrubs.

Overall, the quality of the wildlife habitat on the Ash Peak allotment is good. There is some potential for improvement by setting back the shrub component of the vegetative community with fire, herbicide or mechanical treatment. Treatments done in a manner that increases patchiness, and increase edge effect would enhance benefits to the species emphasized above. Additions of year round water, particularly at the higher elevations, would also prove beneficial.

3.1.2 Livestock grazing

The Ash Peak allotment has remained in the same family since 1947 (the first grazing permit issued from 1 July 1947 to 30 June 1948). This has provided continuity and consistency; a characteristic lacking on many BLM allotments that experience multiple transfers between owners. The predominant ecological sites are Limy Uplands and Volcanic Hill. These sites have historic plant communities of native shrubs and warm season grasses. Precipitation averages around 12 inches per year with the majority falling in late summer early fall.

4.0 Environmental Consequences

4.1 Environmental Consequences of the Proposed Action

4.1.1 Wildlife

Under the proposed action, the permittee would retain maintenance responsibilities for the range improvements that provide water for wildlife. There would be no change in wildlife habitat (water, forage and cover) and therefore no change in wildlife species.

4.1.2 Livestock Grazing

With implementation of the proposed action, there would be no changes in livestock grazing on the Ash Peak Allotment.

4.2 Environmental Consequences of No Grazing Alternative

4.2.1 Wildlife

Under the Taylor Grazing Act, the Bureau would have to purchase the permittees vested interest in the allotments range improvement projects. The Bureau would then wholly own the projects and would have to determine which ones would be kept to provide water for wildlife, and assume all maintenance for the projects kept. Those not determined to be valuable would go into disrepair or be removed from public lands, reducing extra sources of water for wildlife. Permanent removal of livestock would not have an immediate and probably no discernible long term impact on forage and cover. Some small effects on herbaceous cover could result, and herbaceous composition (forage) would have minor changes, slowly over the long term. Removal of livestock grazing alone would only have minor impacts on the vegetative components of habitat.

4.2.2 Livestock grazing

If the no grazing alternative is selected, the permittee would be notified of the decision and a three year process of cancelling the allotment would be initiated. Under the Taylor Grazing Act, the permittee's financial interest in the range improvements on public land would be compensated or purchase would be negotiated. The selection of the no grazing alternative would likely not influence continued grazing on private or state land. The private land on the allotment is already fenced. There are very small portions of an active state land allotment inside of the Ash Peak boundary. This alternative could not constrain the state land department or their permittee from access to or use of the state land. If determined to be an issue, the Bureau would have to resolve it by modifying the location of approximately five miles of fence.

4.3 Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations that implement NEPA defines a cumulative impact as: "The impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Life of the proposed action and its alternatives is ten years; this time frame is considered to be most appropriate for considering the incremental effect of actions in the foreseeable future. Many of the past and present actions are expected to persist through this time frame, though the relative intensity of these actions could vary.

The following critical elements, ACEC's, Floodplains, Wastes, Invasive and Nonnative Species, Cultural Resources, Native American Religious Concerns, Prime Farmland, VRM, Water Quality, Wetlands and Riparian Zones, Wild and Scenic Rivers, Wilderness Characteristics, Wilderness, and T&E Fish/Fisheries would have no cumulative impacts from the proposed action or alternatives, as they are not found within or adjacent to the Ash Peak allotment. Visual resources would not be altered by the proposed action or no grazing alternative and therefore would not add to cumulative impacts.

4.4 Past, Present and Reasonably Foreseeable Future Activities

In 1936, the first attempts were made to process application and claims for livestock use on public lands. First consideration was given to livestock operators who could show control or prior use of water necessary to support livestock grazing on public lands. In most areas, the application for livestock grazing exceeded the land's actual carrying capacity.

In 1935 and 1936, the Soil Conservation Service conducted a range survey of the public lands and presented its finding to the Safford District Advisory Board in 1937. The Advisory Board recommended carrying capacities to be set somewhat higher than range survey indicated. There are no additional range projects proposed in the foreseeable future.

Development of water for wildlife has jointly been an emphasis by the Bureau and the Arizona Game and Fish Department. For the Ash Peak allotment, there is one existing wildlife catchment on public land. There are currently no proposals to construct additional waters.

Ash Peak is located along a state highway with a major power line and gas line along its northern side. There are no additional proposals for rights-of-ways on the allotment.

The allotment is a recreational destination for small and big game hunting with other recreational activities such as hiking, picnicking, birding, horseback riding, primitive camping, and off-highway vehicle driving. Hunting, hiking, birding, and other outdoor activities would likely increase as urban areas become increasingly crowded and rural communities grow.

Roads within the watershed would continue to contribute to erosion in the area.

4.5 Proposed Action

With implementation of the proposed action, livestock grazing would continue as it has resulting in no change to wildlife habitat or the wildlife dependent on the habitat. Livestock grazing would also remain as is with no new impacts or additive to cumulative impacts.

4.6 No Grazing Alternative

Implementation of the no grazing alternative would result in some long term changes. Without livestock waters, larger water-dependent species would be limited to the one wildlife water. This would result in altered habitat uses, change in distribution, and possibly population numbers. To avoid long term impacts to habitat from the loss of livestock waters, the Bureau would have to determine which of the livestock water would be maintained for wildlife. This would also, in the long term, reduce the number and lessen the impacts of human structures on the allotment.

Minor changes in vegetation are expected over the long term. Removal of livestock, in itself, would not noticeably change the vegetative community. It would remain shrub dominated. Herbaceous vegetation cover and diversity would change to a small extent over the long term. Increased standing vegetative matter would result in increased cover for some species. Long term minor changes in vegetative composition may create a more varied forage source. Removal of livestock grazing alone would not alter the dominant vegetative community. Changes to the vegetative components of wildlife habitat would be minor, occur slowly and be long term.

5.0 Consultation and Coordination

5.1 List of Preparers and Contributors

The following table lists persons who contributed to preparation of this EA.

Table 3. List of BLM preparers/reviewers.

Name	Title	Responsible for the Following Program
Dan McGrew	Archaeologist	Cultural Resources Native American Religious Concerns,
Tim Goodman	Wildlife Biologist	Environmental Justice, Federally Listed Species, Socioeconomic Values, BLM Sensitive Plants,
Deb Morris, Tom Schnell, Brian Brinkley	Outdoor Recreation Planner, Assistance Field Office Manager, Park Ranger	Areas of Critical Environmental Concern, Wild and Scenic Rivers, Wilderness, Visual Resources, Wilderness Characteristics,

Heidi Blasius	Fisheries Biologist	Fisheries
Sharisse Fisher	Geographic Information Specialist	NEPA Maps
Roberta Lopez	Realty Specialist	Realty
Bill Wells	Hydrologist	Water Quality and Quantity, Areas of Critical Environmental Concern, Floodplains, Air Quality, Wetlands/Riparian Zones,
Dave Arthun	Range Management Specialist	EA Preparer, Farmlands (Prime or Unique), Invasive, Non-native Species, Invasive, Non-native Species, Livestock Grazing,
R. J. Estes	Range Management Specialist	Wastes (hazardous or solid)
Ron Peru	Realty Specialist	VRM
Joe David	Assistant Field Office Manager	NEPA

The following persons/agencies were consulted during preparation of this EA:
Permittee: George Cox
Western Watersheds Project

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7.0 Appendix 1: Arizona Standards and Guides Evaluation

STANDARDS AND GUIDELINES EVALUATION

Ash Peak # 51050

1.0 Introduction

The Ash Peak Allotment Assessment was conducted in accordance with the direction set forth in the Washington Office Instruction Memorandum No. 98-91 and Arizona No. 99-012 for implementation of Standards for Rangeland Health and Guidelines for Grazing Administration. The purpose of the standards and guidelines is to improve the health of the public rangelands. The standards and guidelines are intended to help the Bureau, rangeland users and others focus on a common understanding of acceptable resource conditions and work together to achieve that vision. The Decision Record for implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration Environmental Assessment were approved by the Arizona State Director in April 1997. This decision became effective upon approval of the Arizona standards and guidelines by the Secretary of Interior in April 1997. The Decision Record allowed for full implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration in all Arizona BLM Land Use Plans.

1.1 Definition of Standards and Guidelines

Standards of rangeland health are expressions of levels of physical and biological condition or degree of function required for healthy, sustainable rangelands and defines minimum resource conditions that must be achieved and maintained. Determination of rangeland health is based upon conformance with the standards. Application of the standard to the range site considers the potential of the site without regard for the types or levels of use or management actions or decisions.

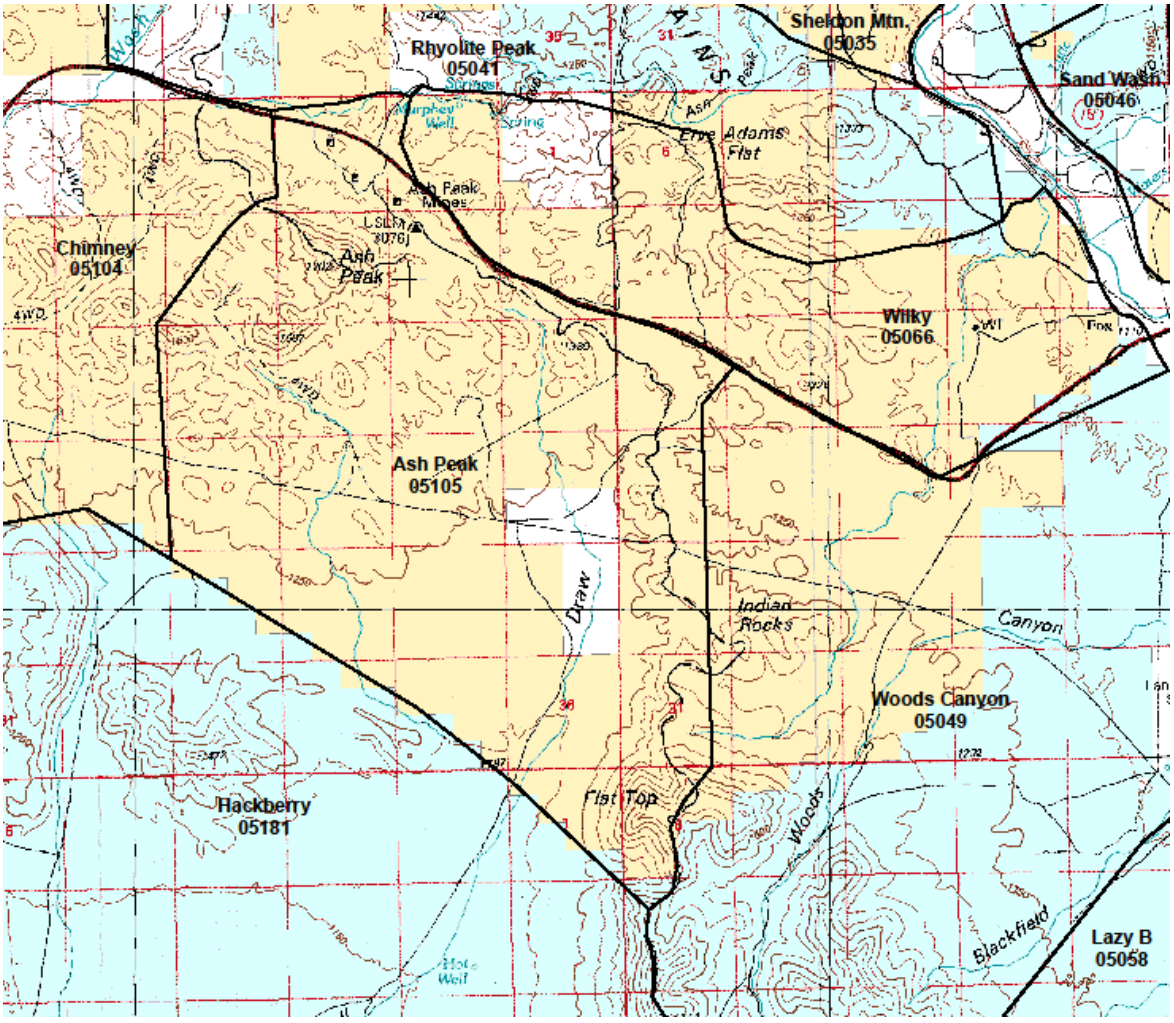
Guidelines, in contrast, do consider type and level of grazing use. Guidelines for grazing management are types of methods and practices determined to be appropriate to ensure the standards can be met or that significant progress can be made toward meeting the standard. Guidelines are tools that help managers and permittees achieve standards. Guidelines are specific to livestock grazing. Guidelines are best management practices such as grazing systems which could be used to achieve rangeland health standards.

Although the process of developing standards and guidelines applies to grazing administration, present rangeland health is the result of the interaction of many factors in addition to grazing livestock. Other contributing factors may include, but are not limited to, past land uses, land use restrictions, recreation, wildlife, rights-of-way, wild horses and burros, mining, fire, weather, and insects and disease (Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, 1997).

2.0 General Description of Evaluation Area

The Ash Peak Allotment is located in Graham and Greenlee counties, approximately seven miles west of Duncan, Arizona and south of Highway 70 (Figure 1). Elevation ranges from 5200' (Flat Top) to 3800' (Whitlock Valley).

Figure 1. Ash Peak Allotment Map.



3.0 Grazing Use

Grazing use on Ash Peak is in accordance with the terms and conditions on the term permit. A summary of type and level of grazing management for the allotments are provided in the Table 1.

Table 1. Current permitted use.

Allotment	Livestock	Season of Use	% Public Land	Active Use (AUM's)
Ash Peak	92	3/1 – 2/28	87	960

Other Terms and Conditions:

In order to improve livestock distribution on the public lands, all salt blocks and/or mineral supplements will not be placed within a ¼ mile of any riparian area, wet meadow or watering facility (either permanent or temporary) unless stipulated through a written agreement or decision in accordance with 43 CFR 4130.3-2 C.

If in connection with allotment operations under this authorization any human remains, funerary objects, sacred objects or objects or cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 STAT. 3048;U.S. C. 3001) are discovered, the permittee/lessee shall stop operations in the immediately area of the discovery, protect the remains and objects, and immediately notify the authorized officer of the discovery until notified by the authorized officer that operations may resume.

Permittee is required to submit a report (Form 4130-5) of the actual grazing use made on this allotment for the previous grazing period, March 1 to February 28. Failure to submit a report by March 15 may result in suspension or cancellation of your grazing permit.

Grazing use is authorized in accordance with the AMP (Allotment Management Plan).

4.0 Evaluation Area Profile

4.1 Land Status

The Grazing EIS (1978) states the evaluation takes place 30 years after the I designation. Efforts have been made to mitigate previous conditions and will continue.

Ash Peak Allotment is identified as I (Improve) category allotment. By definition, I category allotments are based on the following criteria:

1. Present range condition is unsatisfactory and/or needs improvement.
2. Allotments have moderate to high resource production potential and are producing at low to moderate levels.
3. Serious resource use conflict and/or controversy exits.
4. Opportunity exists for positive economic return from public investment.
5. Present management appears unsatisfactory and/or needs improvement.

Allotments in the "I" category require either a change in management practices to improve

conditions and achieve a relatively high resource potential or mitigation of serious resource conflicts. The management objectives for "I" allotments are to improve current resource conditions or resolve conflicts. Therefore, "I" allotments will have first priority for monitoring and use supervision.

Range condition, trend and precipitation will be monitored on all "I" allotments. Utilization and actual livestock use will be monitored on the allotments that receive livestock grazing use. Other studies to monitor water and wildlife habitat will also be conducted. (Safford District RMP, EIS (Final) 1991.

Ash Peak Allotment is comprised of Federal and private land (Table 2).

Table 2. Allotment acreage.

Allotment	Acres (Federal)	Acres (Private)
Ash Peak	12145	640

4.2 Wildlife Resources.

The Ash Peak Allotment is in a geographic position where about ¾ of the allotment drains to the San Simon valley and the rest of the allotment drains towards the Gila River. It has a diversity of geology, elevation and soils, these accounts for a variety of habitats and wildlife species. The rugged upland terrain has been managed for large game animals, mule deer and javelina. There is also the potential for big horn sheep to move into this area at some point in time. Rocky Mountain bighorns are expanding southeast out of the Gila River corridor and desert bighorns are moving northwest out of the Peloncillo Mountains. The lower slopes on the allotment are very good habitat for Gambel's quail with the potential for some scaled quail. Pronghorn antelope are moving up from the south and occurring more frequently on the allotment. Some portions of the allotment with non-limey soils have become dominated by creosote bush. Creosote out competes other vegetation for water and is likely much more abundant than in historic times (figures 7 and 8). In general wildlife habitat would benefit from a vegetation conversion that brings more abundance of herbaceous grasses and forbs into the vegetative community. This would be particularly true if the conversion was done in a manner that increased patchiness in the vegetative patterns and increased edge effect.

Deer: Habitat degradation from excessive herbivory and drought can alter and / or eliminate cover and food needed by mule deer and other wildlife species. Perennial bunch grasses and low shrubs are required fawning habitat (*i.e.,* cover) for mule deer and offer concealment from predators. Adult animals also require cover for hiding and resting. Hiding or resting locations are selected to provide concealment, a view of the surrounding terrain, and easy access to escape routes.

Deer feed primarily on browse and forbs. Forbs are highly preferred and in spring and summer can comprise 20% to 40% of the annual diet; whereas browse can constitute between 40% to 70% of the diet in fall and winter. Mule deer are selective feeders and will choose the most succulent and nutritious shoots and grasses on which to feed. Diet largely depends on the ecoregion in which they live (Heffelfinger, et al., 2006), in more productive habitats, such as

woodland areas, a greater variety of food will be eaten than in desert areas.

Grazing at light to moderate levels has little impact on mule deer since browse and forbs constitute 90% of their diet with grass important only in early spring. Cattle consume primarily grass, with forbs and browse as secondary, but seasonally important components. Overgrazing results in livestock consuming more browse, which exacerbates the level and intensity of competition with mule deer. To reduce this impact livestock should not be allowed to browse more than 50% of the annual leaders growth (by weight), which equates to approximately 50% of the leaders browsed (Holechek and Galt, 2000).

Disappearance of springs, cienegas, and other natural waters in the southwest due to anthropogenic activities has negatively affected mule deer and other wildlife species (Heffelfinger, et al., 2006). Habitat fragmentation from highways fences and other human structures have limited the ability of deer to access water that was historically used.

Resident deer populations occur on the allotment primarily in the more rugged terrain and on the mid slopes. Lower flatter areas are used for movement. The allotment provides good habitat for deer.

Javelina: Like mule deer, javelina, inhabit a variety of different habitat types throughout Arizona and are quite adaptable. Javelina are opportunistic feeders and require a diverse plant community comprised of flowers, fruits, nuts, grasses, forbs, shrubs, vines, succulents, and trees for survival. Prickly pear cactus comprises a major portion of their diet. A diverse and intact plant community not only provides forage, but much needed shelter and cover. Sonoran desert scrub and desert grassland habitat are two of the most important biotic communities in Arizona for javelina and comprise approximately 67% of their range. Javelina does not inhabit pure grasslands, but grasslands that have been invaded by shrubs and cacti. Riparian forests are also important and are used quite frequently by javelina as sources of water, food, and cover (Day 1985).

There is a resident population of javelina on the allotment occurring primarily in the mid slope areas that provide a high abundance of cacti and vegetation diversity. The allotment provides limited, but good habitat for javelina.

Bighorn Sheep: Bighorn have similar forage needs as mule deer, favoring forbs and shrubs. Bighorns tend to do best when the vegetation is diverse but not high enough to obscure their vision. Bighorn in general can suffer from forage and spatial competition from both cattle and other wildlife such as mule deer. By nature bighorn segregate themselves from other large species by occupying open steep rocky slopes. Because of this, spatial and forage competition is most likely to occur during periods of excessive forage use and drought (Valdez and Krausman, 1999).
The highest topography on the allotment provides limited, but good potential habitat for bighorn sheep. It is most likely that desert bighorns will move up from the south into the area given time (10-20 years). Rocky mountain bighorn movement into the habitat on the allotment is limited by a state highway.

Pronghorn: Of the larger species of wildlife pronghorn maybe best adapted to coexist with livestock having evolved with bison. But, excessive herbivory and drought can alter and / or eliminate cover and food. Patches of perennial bunch grasses and low shrubs are required for fawning habitat. Adult pronghorn prefer large open areas without visual obstructions.

Pronghorn feed primarily on forbs followed by shrubs then grasses. Grazing at light to moderate levels has little impact on pronghorn since browse and forbs constitute most of their diet with grass important only in early spring. Cattle consume primarily grass, with forbs and browse as secondary, but seasonally important components.

Pronghorn are starting to move into the allotment from the south. Pronghorn habitat occurs in the lowest gentlest terrain on the allotment. The habitat is only fair for pronghorn given the vegetative dominance of shrubs.

Overall the quality of the wildlife habitat on the Ash Peak Allotment is good. There is some potential for improvement by setting back the shrub component of the vegetative community with fire, herbicide or mechanical treatment. Treatments done in a manner that increases patchiness, and increase edge effect would enhance benefits to the species emphasized above. Additions of year round water particularly at the higher elevations would also prove beneficial.

4.2.1 Listed Species

Federally Listed and Candidate Species

The Safford Field Office implements it grazing program consistent with the Biological Opinion (BO) on the Gila District Livestock Grazing Program for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (22410-2006-F-0414). This BO was reviewed to insure that all applicable conservation measures stated in the BO are being followed. In addition, a current review of Graham County listed and candidate species is provided below (Table 3).

Table 3. Listed Species in Graham County

Common Name	Scientific Name	Listing Status	Affected
American peregrine falcon	*Falco pereginus anatum*	D	Considered BLM Sensitive Species. No eyries are known to occur within five miles of the allotment.
Apache trout	*Oncorhynchus apache*	T	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Arizona cliff-rose	*Purshia subintegra*	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Bald Eagle	*Haliaeetus leucocephalus*	D	Considered BLM Sensitive Species. There are no known occurrences of bald eagles on or within 5 miles of the allotment.
Chiricahua leopard frog	*Rana chiricahuensis*	T	No affect. There are no known locations or suitable habitat within five miles of the allotments.
Desert pupfish	*Cyprinodon macularius*	E	No affect. There are no known locations or suitable

			habitat within five miles of the allotment.
Desert tortoise, Sonoran population	*Gopherus agassizii*	C	Considered a BLM Sensitive Species. There are no known locations or suitable habitat within five miles of the allotment.
Gila chub	*Gila intermedia*	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Gila topminnow	*Poeciliopsis occidentalis occidentalis*	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Headwater chub	Gila nigra	C	Considered a BLM sensitive species. There are no known locations or suitable habitat within five miles of the allotment.
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	E	No affect. There are no known roost locations within 40 miles of the allotment.
Loach minnow	*Tiaroga cobitis*	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Mexican spotted owl	*Strix occidentalis lucida*	T	No effect. There are no known locations or suitable habitat within five miles of the allotments
Mount Graham red squirrel	*Tamiasciurus hudsonicus grahamensis*	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Northern Mexican gartersnake	Thamnphis eques megalops	C	Considered a BLM Sensitive Species. There are no known locations or suitable habitat within five miles of the allotment.
Ocelot	*Leopardus pardalis*	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Razorback sucker	*Xyrauchen texanus*	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Round tailed chub	*Gila robusta*	C	Considered a BLM sensitive species. There are no known locations or suitable habitat within five miles of the allotment.
Southwestern willow flycatcher	*Empidonax traillii extimus*	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Spikedace	*Meda fulgida*	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Wet Canyon talussnail	Sonorella macrophallus	CA	There is no known occurrence on BLM administered public lands.
Yellow-billed Cuckoo	*Coccyzus americanus*	C	Considered a BLM sensitive species. There are no known locations or suitable habitat within five miles of the allotment.

E – Endangered T – Threatened C – Candidate CA - Conservation Agreement D - Delisted
Reference http://arizonaes.fws.gov/

4.2.2 Special Status Species

The Safford Field Office reviewed a list of known Special Status Species occurrences in or within five miles of the Ash Peak Allotment provided by the Arizona Game and Fish Department, Heritage Data Management System, on May 1, 2009 (AGFD #M09-04213056) and rechecked July 2012. No species have been documented on the allotment or within five miles

that are on the current list of Arizona BLM sensitive species.

4.3 Soils and Ecological Sites

For a complete description of soils on Ash Peak Allotment refer to San Simon Area, Arizona Parts of Cochise, Graham and Greenlee Counties Soil Survey (NRCS 1981). Ecological Site descriptions can be found at
http://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD
Specific information on soil and ecological sites will be detailed in:

Section 4.10 Key Areas / Key Species
Section 5.1.2 Upland health Assessment.

4.4 Special Management Areas

There are no special management areas within Ash Peak Allotment.

4.5 Recreation Resources

Dispersed recreation primarily involves small and big game hunting, target shooting and off-highway vehicle (OHV) operation. Vehicle access to the allotment is primarily off Hwy.70.

4.6 Visual Resources

Visual Resource Management (VRM) Class III, Buffer and Class IV. (Appendix 6 (Safford District Resource Management Plan, Environmental Impact Statement, 1991), VRM class objectives.

Class III: The objective of this class is to partially retain the existing character of the landscape. The level of activity may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. Class III, Buffer follows the corridor of Hwy 70.

Class IV**:** The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. Every attempt should be made, however, to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements. The balance of Ash Peak is Class IV.

4.7 Cultural Resources

Issuance of the permit constitutes a Federal Undertaking under Section 106 of the National Historic Preservation Act (NHPA). The Area of Potential Effect (APE) has been determined to be the public lands within the grazing allotment.

In compliance with the BLM Cultural Resources Programmatic Agreement, the Arizona BLM-

SHPO Protocol, the 1980 Programmatic Memorandum of Agreement between the BLM, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Livestock Grazing and Range Improvement Program, and the BLM 8100 Manual series, the following actions have been taken to identify cultural resources located in the APE, evaluate the eligibility of cultural resources for listing in the National Register of Historic Places (NRHP), determine the effect of the undertaking on eligible cultural resources, and design mitigation measures or alternatives where appropriate.

The State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and Indian tribes having historical ties to Arizona public lands were consulted during the preparations of the Upper Gila/San Simon Grazing Environmental Impact Statement (9/86) and the Safford Resource Management Plan (9/78). Indian tribes were consulted at the beginning of the permit renewal process. There were no areas of Native American concern, Traditional Cultural Properties (TCP), or Sacred Sites identified during consultations.

A Cultural Resource Compliance Documentation Record (Project No. AZ-410-09-011) was completed 17 March 2009 by Safford Field Office Archaeologist Daniel L. McGrew.

As required by the Native American Graves Protection and Repatriation Act regulations at 43 CFR 10.4(g), the following should be added to the grazing lease/permit as a term and condition:

> If in connection with allotment operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The permittee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.
>
> Properties refer to archaeological sites, Traditional Cultural Properties, and Sacred Sites.

4.8 Noxious Weeds/Invasive Species

No noxious weeds were observed on the Ash Peak Allotment; however, noxious plants are either present in the area or identified in adjacent areas, Malta starthistle (*Centaurea melitensis*) has been located on Hwy. 70 between Safford and Duncan. Russian knapweed (*Rhaponticum repens*) is a serious problem in Duncan. BLM is an active partner with other Federal, State and local efforts to control knapweed in the Duncan area. (For a list of noxious weed species in Graham and Greenlee County see Appendix I).

Any future treatment will be in conformance with Environmental Impact Statement, Vegetation Treatment on BLM Lands in Thirteen Western States, May, 1991: Safford District Resource Management Plan (RMP), (date approved: Record of Decision Part I, September 1992; Record of Decision Part II, July 1994) and Consistency with Related Subordinate Implementation Plans.

4.9 Precipitation

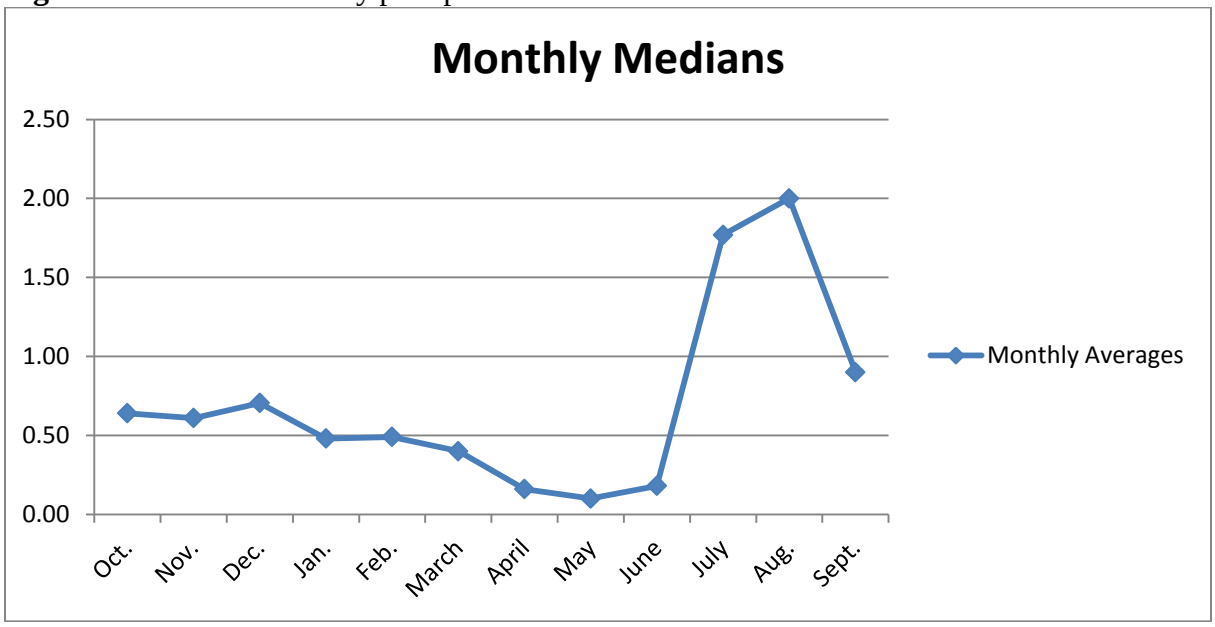
Precipitation patterns are typically bimodal with the majority occurring July to September. Summer rainfall (monsoon) is heavy localized convectional thunderstorms while winter moisture results from general frontal storms. Precipitation data is collected from BLM, National Oceanic and Atmospheric Agency, and rain gauge stations within the BLM Administrative Area (Figures 2 and 3). Data presented in Table 3 originated from rain gauge station located on the Ash Peak Allotment.

Table 4. Ash Peak Rainguage Data.

Ash Peak Rainguage						NENW Sec.24, T.8S., R.30E						Elevation 4280 Ft	
Year	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Total
1983										3.73	1.06	2.99	7.78
1984	4.34	2.99	1.18	1.13	0.02	0.00	0.99	0.04	1.43	3.77	3.12	1.22	20.23
1985	2.50	0.51	2.81	1.28	0.98	1.27	0.75	0.10	0.04	3.09	1.89	2.30	17.52
1986	2.60	1.32	0.57	0.06	1.34	1.96	0.04	0.10	0.45	2.73	1.84	1.08	14.09
1987	1.23	1.74	1.25	0.48	0.19	0.44	0.6	0.6	0.2	1.94	2.54	0.62	11.88
1988	0.26	0.65	2.16	0.75	1.31	0.00	1.03	0.00	0.28	1.63	2.00	0.63	10.70
1989	1.66	0.61	0.39	0.87	0.04	0.20	0.02	0.44	0.00	1.74	0.24	1.20	7.41
1990	2.05	0.00	0.18	0.38	0.70	0.51	0.11	0.26	0.35	3.00	2.80	1.15	11.49
1991	0.76	1.37	3.90	0.98	1.48	1.97	0.00	0.14	0.00	1.67	3.59	1.76	17.62
1992	0.35	1.35	4.30	1.03	1.80	1.36	0.65	3.48	0.56	0.85	2.53	0.45	18.71
1993	0.79	0.02	2.73	4.27	2.01	0.39	0.00	0.05	0.00	0.68	4.34	0.00	15.28
1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1995	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1996	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1997	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1998			2.11	0.07	1.72	1.80	0.16	0.00	0.03	2.70	1.57	0.62	10.78
1999	0.30	0.72	0.64	0.03	0.01	0.12	0.73	0.10	0.84	3.65	3.07	1.05	11.26
2000	0.00	0.00	0.00	0.11	0.00	0.35	0.00	0.00	0.88	0.76	4.29	0.16	6.55
2001	5.38	1.62	0.17	0.76	0.43	0.54	0.96	0.24	0.28	1.80	2.91	0.51	15.60
2002	0.28	0.18	0.64	0.06	0.36	0.33	0.07	0.00	0.00	1.72	1.88	0.78	6.30
2003	1.21	0.36	1.18	0.27	0.55	0.40	0.15	0.01	0.18	0.94	0.82	0.01	6.08
2004	0.31	0.95	0.22	1.39	1.01	1.51	1.60	0.00	0.04	1.64	0.78	1.75	11.20
2005	0.77	1.29	0.68	1.84	3.21	0.54	0.19	2.49	0.00	1.11	1.59	0.77	14.48
2006	0.52	0.00	0.08	0.25	0.10	0.00	0.23	0.07	0.11	3.51	2.69	1.26	8.82
2007	1.28				0.40	0.15					0.00	0.75	NA
2008	0.00	0.20	1.50	0.18	0.20	0.01	0.02	0.63	0.03	8.32	2.85	1.70	15.64
2009	0.31	0.40	1.63	0.30	0.40	.4	0	.73	1.00	.4	.56	.9	7.03

2010	0.22	0.78	0.40	2.70	1.97	0.58	0.47	0.13	0.65	2.80	4.43	1.35	16.48
2011 Median	.33 7	.05 3	.73 8	.1 8	.17 9	.1 0	0 8	0 0	0 5	.78 0	1.85 7	.75 2	4.86 5
Count				18	18	18	18	18	18	19	19	19	
Total	26.90	16.28	28.32	16.49	18.26	13.85	8.30	8.77	5.73	50.98	48.40	22.76	12.30

Figure 2. Ash Peak monthly precipitation.



4.10 Key Areas / Key Species

Key areas are indicator areas that are able to reflect what is happening on a larger scale as a result of on-the-ground management actions. A key area should be a representative sample of a large stratum, such as a pasture, grazing allotment, wildlife habitat area, herd management area, or watershed area depending on the management objectives being addressed by the study. Key species are generally an important component of a plant community as they serve as indicators of change and may or may not be forage species. Refer to Table 5 for key areas on Ash Peak.

Table 5. Four key areas (monitoring sites) located on the Ash Peak Allotment.

Site	GPS (NAD83 CONUS)
3	12S 0666124 UTM 3618118
3A	East of Site 3 approx. 50 yards
4	12S 0661648 UTM 3621925
4A	West of Site 4 approx. 50 yards
AP-02[1]	12S 0667782 UTM 3622703
AP-06	12S 0665800 UTM 3620400 (approx)

[1] University of Arizona monitoring and BLM RHA (Rangeland Health Assessment) evaluation locations.

4.11 Allotment Objectives

Standard 1: Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform.

Standard 2: Riparian- Wetland Sites

Maintain or improve riparian/wetland areas to facilitate proper functioning condition.

Standard 3: Desired Resource Condition

Maintain or improve productive and diverse upland and riparian-wetland plant communities of native species.

5.0 Management Evaluation

5.1 Actual Use

Table 6. Actual use[1] Ash Peak.

Preference (AUMs)	2006	2007	2008	2009	2010	*2011*[2]	*2012*[2]	*2013*[2]
960	960	960	960	740	960	*740*	*746*	*741*

[1] Based on Actual Grazing Use Report (4130-5), RAS Billing Statements.

[2] AUMs were reduced to allow rest for herbicide treated areas in 2010 (EA # DOI-BLM-AZ-G010-2009-0069).

5.2 Upland Health Assessment

The National Research Council (1994) suggested rangeland health as an alternative to condition. Rangeland health is defined as: "*the degree to which the integrity of the soil and ecological processes of rangeland ecosystems are maintained*." Ecological processes are to include: the *water cycle* (the capture, storage and safe release of precipitation), *energy flow* (conversion of sunlight to plant and then animal matter), and *nutrient cycle* (the cycle of nutrients through the physical and biotic components of the environment) (USDI 2005). Integrity is defined as "*maintenance of the functional attributes characteristic of a locale, including normal variability*" (USDA 1997).

NRCS (1994) considers ranges in one of three categories: *healthy*, *at risk*, and *unhealthy*. Rangeland health is defined as the sustainability of basic soil and ecological processes. Ranges classified as healthy require no change in management, but those classified as at risk may require a change in management to restore them to healthy condition. A change from healthy to *at risk* is reversible while the change from at risk to unhealthy cannot be reversed without expenditure of energy.

Upland health assessment was completed (13 November 2008, 24 April 2013) at two key areas: AP-02 and near AP-06.

This method involves observing a set of physical and biological attributes at a site to determine upland health. The product of this qualitative assessment is not a single rating of rangeland health, but an assessment of three components called attributes (USDI 2005).

These observed attributes are placed in one of five categories depending on their degree of presence or absence on the site (i.e. None to Slight, Slight to Moderate, Moderate, Moderate to Extreme, and Extreme). These attributes include items such as: plant predestining, flow patterns, soil and litter movement by wind or water, presence of rills or active gullies. A final upland health determination is made by summing all of the attributes.

5.2.1 Ground Cover

Ground cover is the amount of soil surface comprised of bare ground, perennial plant bases, litter, gravel or rocks. Ground cover data, each soil protection category expressed as a percentage of total hits, reflect the amount of litter, vegetative root bases, gravel and rocks available to intercept raindrop impact before reaching the soil and of bare ground exposed to climatic elements (McReynolds et al. 2006). Total cover is the single most important factor affecting water erosion (Herrick et al, 2005).

Ground cover data were collected in 2008 and 2013. These data were collected in accordance with Frequency Methods – Pace Frequency (U.S. Department of Interior, Bureau of Land Management, Sampling Vegetation Attributes. 1996) and Quadrat Placement (McReynolds et al. 2006).

For a more detailed discussion on cover the reader is referred to:

Evans, R. A., and R.M. Love. 1957. The step-point method of sampling. A practical tool in range research. J. Range Manage. 10:208-212.
Bonham, C.D. 1989. Measurements for terre trial vegetation. John Wiley and Sons. New York.
Holechek, J.L., R.D. Pieper and C. H. Herbal. 2001. Range Management Principles and Practices.
Cooper, C.F. 1959. Cover vs. density. J. Range Manage. 12:215

5.2.2 Frequency / Trend

Plant density and frequency measurements are commonly used to determine plant survival in response to grazing and drought, plant establishment and range trend (Holechek et al., 2001). Density is defined as the number of individual plants per area (Cooper, 1959). Frequency is the quantization expression of the presence or absence of individuals of a species in a population (Society for Range Management, 1989).

Frequency is typically used to evaluate plant species distribution over an area and/or changes in abundance of a species over time due to management. It has often been used as a measure of range trend (Holechek et al., 2001). Because of the greater risk of misjudging a downward than upward trend, frequency may provide the easiest early warning of undesirable changes in key or indicator species (West, 1985).

Trend data were collected in 2003, 2006 and 2013. These data were collected in accordance with Frequency Methods – Pace Frequency (U.S. Department of Interior, Bureau of Land Management, Sampling Vegetation Attributes. 1996) and Pace Frequency (McReynolds et al. 2006).

Frequency describes abundance and distribution of a species. Therefore, it is useful in detecting changes in a plant community over time. It's highly repeatable and rapid as it requires a minimum number of decisions. The decision is limited to identifying the species and determining whether or not species are rooted within the quadrats (presence or absence). Only one record for each species is recorded, regardless of the number of individual species present. Therefore it does not express species composition, only species present. Species must be rooted in the quadrat. Canopy hit are any portion of canopy that overhangs the quadrat (McReynolds et al. 2006).

Raunkiaer's "law of distribution of frequencies" was advanced by Danish botanist Christen Christensen Raukiaer (1860 – 1938), also known for his life-form classification. For a historical background on Raunkiaer's and Similar Methods of Vegetation Analysis and the "Law of Frequency", the reader is referred to Romell (1930).

5.2.3 Composition

Species composition data were collected using the Dry Weight Rank (DWR) methodology at each key area. DWR data were collected in accordance with procedures outlined in "Sampling Vegetation Attributes, Interagency Technical Reference, 1996". Composition and DWR were collected in 2003, 2006 and 2013.

6.0 Conclusions

Table 7. Rangeland health evaluation (Completed November 2002, Sundt).

Site		Departure From Ecological Site Description				
	Date	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
AP-01[1]	7-11-2002				B	SH
AP-03[2]	6-28-2002			B	SH	
AP-04[1,3]	7-11-2002		B	H	S	

Where:
S = Soil/Site stability
H = Hydrologic Function
B = Biotic Integrity
[1] = R041XC330AZ (Volcanic Hills 12-16" p.z.) no Reference Sheet. Atascosa / Graham. silty clay loam
[2] = R041XC304AZ (Clayey Upland 12-16" p.z.) no Reference Sheet.
[3] = Indicators 13,14,15,16 and 17 placed Biotic Integrity in Moderate to Extreme due to drought.

Table 8. Rangeland health evaluation (Completed November 2008).

Site	Departure From Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
AP-02[1]					SHB
AP-06[2]					SHB

Where:
S = Soil/Site stability
H = Hydrologic Function
B = Biotic Integrity
[1] = R041XC330AZ (Volcanic Hills 12-16" p.z.) no Reference Sheet. Atascosa / Graham. silty clay loam
[2] = R041XB208AZ (Limy Upland 8-12" p.z.); no Reference Sheet.

Table 9. Rangeland health evaluation (Completed April 24 2013).

Site	Departure From Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
AP-02[1]					SHB
AP-06[2]					SHB

Where:
S = Soil/Site stability
H = Hydrologic Function
B = Biotic Integrity
[1] = R041XC330AZ (Volcanic Hills 12-16" p.z.) no Reference Sheet. Atascosa / Graham. silty clay loam
[2] = R041XB208AZ (Limy Upland 8-12" p.z.); Reference Sheet approved 3-27-2013.

6.1 Comments on 2013 RHA

Limy Upland Reference Sheet for Attribute # 8, Soil Surface Resistance to Erosion, has an average value for soil slake test of 3, with interspace = 2 and canopy = 4.3. AP-06 had an average of 4.1, with interspace = 3.1 and canopy = 5.1.
Volcanic Hills did not have a Reference Sheet but AP-02 had an average soil slake of 3.63.

Soil aggregate stability is widely recognized as a key indicator of soil (Karlen and Stott, 1994; Arshad et al., 1996) and rangeland health (reviewed in Herrick et al., 1999). It is closely related to a number of ecosystem properties, processes and functions, including the quality and composition of soil organic matter (Tisdall, 1996), and soil biotic activity (Wander et al., 1994), infiltration capacity (Pierson et al., 1994) and resistance to erosion (Blackburn and Pierson, 1994). The stability of larger macro aggregates, in particular, is largely a function of active soil organic matter fractions (Bethlenfalvay and Barea, 1994: Degens et al., 1994: Tisdall, 1996). For a detailed discussion the reader is referred to Herrick et al. (2001).

The Limy Site appeared to have more perennial grass than in 2008. The herbicide treatment may have increased the amount of perennial grasses. Monitoring the herbicide treatment site is planned for later this year.

Figure 3. Monitoring site AP-02 (Ash Peak Allotment).

6.1.1 AP-02 (Ash Peak)

Biotic Integrity was placed in the “none to slight” category.
Hydrologic Function was placed in the “none to slight” category.
Soil and Site Stability was placed in the “none to slight” category.

Table 10. Attribute rating for soil and site stability (AP-02).

				11 11
				9
				8
				6 6
				5 5
				4 4
				3 3
			9	2 2
			8	1 1
E (Extreme)	M-E (Moderate to Extreme)	M (Moderate)	S-M (Slight to Moderate)	N-S (None to Slight)

Soil and Site Stability was placed in the "none to slight" category (2008). Rills were few and what was expected for the site. Water flow patterns were minimal, no flow lengths were connected and erosion minor. Pedestals and/or terracettes were absent. Bare ground was 23% (University of Arizona, May, 2005), with ESD (Ecological Site Description) giving a range at 5-25%. Gullies were represented as natural stable channels; vegetation common and no sign of erosion (Figure 5). Wind-scoured blowouts were not observed. Soil surface resistance to erosion was scored at slight to moderate because soil surface is stabilized by the rock armor and plant cover (Figures 3, 4 and5). Soil surface loss or degradation was on "the line" between none to slight and slight to moderate. Soil horizon was intact. Surface was a silty clay loam, 5YR 3/3 granular structure (Graham and Atascosa, Soil Map Unit #5). Compaction was none to minimal and was not restricting water movement or root penetration.

Soil and Site Stability was placed in the "none to slight" category (2013 values are in red)**.** Volcanic Hills did not have a Reference Sheet but AP-02 had an average soil slake of 3.63. This value would indicate soil surface is stabilized by organic matter decomposition products; therefore, indicators 8 and 9 were placed in the *None to Slight* category. In 2008 the soil aggregate stability tests were not used. Since soil changes occur over relative long periods of time soil properties were likely the same in 2008.

Figure 4. AP-02 (Ash Peak).

Figure 5. AP-02 (Ash Peak).

Figure 6. AP-02, Indicator #5, Gullies (Ash Peak).

Table 11. Attribute rating for hydrologic function (AP-02).

				14 14
				11 11
				10 10
				9
				8
				7 7
				5 5
				4 4
				3 3
			9	2 2
			8	1 1
E (Extreme)	M-E (Moderate to Extreme)	M (Moderate)	S-M (Slight to Moderate)	N-S (None to Slight)

Hydrologic Function was placed in the "none to slight" category (2008). Hydrologic indicators 1-5,8,9 and 11(see narrative in Soil/Site Stability). Indicator # 7 Litter Movement. Litter was 31% (University of Arizona, May 2005) with ESD (Ecological Site Description) giving a range at 25-55%. What litter was uniformly distributed. Indicator # 10 Plant Community Composition and Distribution Relative to Infiltration and Runoff. Plant community composition was well represented by HCPC (Historical Climax Plant Community), e.g. Tobosa and Sideoats grama (Figure 6).

Hydrologic Function was placed in the "none to slight" category (2013). See comments for *Soil and Site Stability*. (see University of Arizona numbers [Table 12] for ground cover).

Table 12. Ground cover percent between 2005 and 2013, University of Arizona data, (AP-02).

Category	2005	2013
Bare Ground	23	9
Litter	31	44

Figure 7. AP-02, Indicator #10, Plant Community Composition and Distribution Relative to Infiltration and Runoff (Ash Peak).

Table 13. Attribute rating for biotic integrity (AP-02).

				17 17
				16 16
				15 15
				14 14
				13 13
				12
			12	11 11
			9	9
			8	8
E (Extreme)	M-E (Moderate to Extreme)	M (Moderate)	S-M (Slight to Moderate)	N-S (None to Slight)

Biotic Integrity was placed in the "slight to moderate" category (2008). Biotic indicators 8 and11 (refer to Soil/Site Stability narrative) and indicator # 14 (refer to Hydrologic Function narrative).

Functional/Structural Groups. # 12 was borderline between none to slight and slight to moderate. Shrubs may have been more than expected (creosote and catclaw). The amount of shrub increase was well below the threshold that would move it out of the Reference State.
Annual production exceeded 80% . ESD (Ecological Site Description) gives a representative value at 1000 pounds per acre. Invasive plants (indicator #16) was none to slight (what is expected for the site). Invasive plants can be either exotic or native. If native then they would of only make up a minor component of the original plant community. Catclaw and creosote numbers may have exceeded ideal HCPC values (canopy cover) but as stated before are well within the Reference State. Reproductive Capability of Perennial Plants (Indicator # 17) was none to slight. Despite recent droughts perennial shrubs and grasses (seedheads) appeared healthy.

Biotic Integrity was placed in the "None to Slight" category (2013 in red). Indicator #12 was placed in the "None to Slight" category. Dominant perennial grasses > shrubs > succulents and annuals. There is no indication that Functional/ Structural Groups have been reduced or modified (see University of Arizona numbers [Tables 14 & 15] for frequency and dry weight rank).

Table 14. Frequency of species between 2005 and 2013 (AP -02).

Species	2 May 2005	3 April 2013
Acacia greggii	10	9
Bouteloua eriopoda	3	12
Muhlenbergia porteri	7	20
Pleuraphis mutica	29	25

Table 15. Dry weight rank 2013 (AP-02).

Species	2013
Acacia greggii	5.54
Bouteloua eriopoda	16.24
Muhlenbergia porteri	27.82
Pleuraphis mutica	43.37

6.1.2 AP-06 (Ash Peak)

Biotic Integrity was placed in the " none to slight" category.
Hydrologic Function was placed in the "none to slight" category.
Soil and Site Stability was placed in the "none to slight" category.

Table 16. Attribute rating for soil and site stability (AP-06).

				11 11
				9 9
				8
				7 7
				6 6
				5 5
				4
			8	3
			4	2 2
			3	1 1
E (Extreme)	M-E (Moderate to Extreme)	M (Moderate)	S-M (Slight to Moderate)	N-S (None to Slight)

Soil and Site Stability was placed in the "none to slight" category (2008). Rills. What is expected for the site. Water flow patterns; minimal evidence of past or current soil deposition or erosion. Pedestal and /or terracettes. Terracettes were small and uncommon. Bare ground was within range of 10 -80% (NRCS Site Guide). Gullies were none, which is what is expected for the site. Wind-scoured blowouts were none. Soil surface resistance to erosion. Some reduction is soil surface. Soil surface loss or degradation. Soil surface horizon intact. No compaction layer. Litter movement. Coarse woody litter remained under shrub canopies. Soil surface resistance to erosion.

Soil and Site Stability was placed in the "none to slight" category (2013). Indicator # 3. Terrecettes were not found and pedestals on creosote bush were 2-3 inches…expected for the site. Indicator # 4. Soil was well armored with gravel and exposed soil areas small (< 2 inches in diameter) and not connected.

Figure 8. AP-06 (Ash Peak).

Figure 9. AP-06 (Ash Peak).

Table 17. Attribute rating for hydrologic function (AP-06).

				11
				10
				9 9
				8
				7 7
				5 5
			10	4
			8	3
			4	2 2
			3	1 1
E (Extreme)	M-E (Moderate to Extreme)	M (Moderate)	S-M (Slight to Moderate)	N-S (None to Slight)

Hydrologic Function was placed in the "none to slight" category (2008). Hydrologic indicators 1-5,8,9 and 11(see narrative in Soil/Site Stability). Indicator # 7 Litter Movement. Coarse woody litter remained under shrub canopies. Litter was within range of 1 - 20% (NRCS Site Guide).
What litter was being displaced was small size classes. Indicator # 10 Plant Community Composition and Distribution Relative to Infiltration and Runoff. Some openings occurred between creosote due to lack of perennial grass.

Cover is well dispersed throughout the site. Bare ground was only 6.5%. Good canopy and basal cover (Figures 7and 8).

Hydrologic Function was placed in the "none to slight" category (2013). Indicator # 10 was placed in the "None to Slight" based on Indicators 3, 4, 8, and 9.

Table 18. Attribute rating for biotic integrity (AP-06).

				17
				16
				15
				14
				13
				12
			12	11
			8	9
				8
E (Extreme)	M-E (Moderate to Extreme)	M (Moderate)	S-M (Slight to Moderate)	N-S (None to Slight)

Biotic Integrity was placed in the "none to slight" category (2008). Biotic indicators 8 and11 (refer to Soil/Site Stability narrative) and indicator # 14 (refer to Hydrologic Function narrative).

Functional/Structural Groups # 12. Some reduction in functional/structural group (threeawns and bush muhly) and perennial forbs. Plant mortality and decadence. What is expected for the site with no observed mortality. Litter amount. See comments under Hydrologic narrative. Annual production exceeded 80% . ESD (Ecological Site Description) gives a representative value at 200 pounds per acre. Invasive plants can be either exotic or native. Creosote dominates a Limy Upland site and is the dominant shrub on this site. Reproductive Capability of Perennial Plants (Indicator # 17) was none to slight. Despite recent droughts perennial shrubs and grasses (seedheads) appeared healthy.

Biotic Integrity was placed in the "none to slight" category (2013 red). Functional/Structural Groups # 12. Creosote >> perennial grasses = succulents = half shrubs. Based on Reference Sheet this is what is expected for the site.

Table 19. University of Arizona monitoring data for percent ground cover, frequency and dry weight rank (Site 3, 2013).

Ground Cover	**2 May 2005**	**4 April 2013**
Bare Ground	32	19
Litter	27	47
Frequency		
Gutierrezia sarothrae	15	0
Pleuraphis mutica	42	61
Prosopis	10	19
Dry Weight Rank		
Pleuraphis mutica		86
Prosopis		10

Table 20. University of Arizona monitoring data for percent ground cover, frequency and dry weight rank (Site 4, 2013).

Ground Cover	**3 April 2013**
Bare Ground	5.7
Litter	70
Frequency	
Acacia greggii	8
Bouteloua eriopoda	16
Aristida	4
Dry Weight Rank	
Bouteloua eriopoda	32
Aristida	7

6.2 Standard 1. Upland Sites

The criteria for Standard 1 are met.

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

In order to better understand the soils and watershed health, upland health assessments was conducted at key areas AP-02 and AP-06 in 2008 and 2013 on the Ash Peak Allotment. Soil/site stability, hydrologic functions and biotic integrity were evaluated to help determine a rating (departure from ecological site potential) for each site. A "*preponderance of evidence*" approach is used to select the appropriate departure category for each attribute.

Criteria for meeting Standard 1:

Ground Cover

- litter
- live vegetation

Erosion

- flow patterns
- gullies
- rills
- plant predestining

Guidelines:

1. Management activities that will maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage and soil stability appropriate for the ecological sites within management units. Continue rotation grazing that provides for rest two out of three years.
2. When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments may be designed and implemented to attain improvement.

The soils are generally a gravely loam which is a preferred soil texture for effective herbicidal treatment, specifically tebuthiuron treatment of creosote (Lane Houser, Las Cruces BLM, personal communication, December 2008). Precipitation is adequate and the proximity to New Mexico makes Ash Peak a good candidate for possible treatment.

2013 Evaluation:

Based on the Ecological Site Guide (Volcanic Hills and Limy Upland) and the RHA at Monitoring Site AP-02 and AP-06 these ecological sites have *not* transitioned from their Historic Climax Plant Community.

Herbicide treatments were applied in 2010 and monitoring is scheduled for 2013 / 2014 time frame.

6.3 Standard 2: Riparian-Wetland Sites

There are no riparian areas on Ash Peak. Therefore, Standard 2 was not considered.

6.4 Standard 3: Desired Resource Conditions

The criteria for Standard 3 are met. The sites were within the Reference State (HCPC) The State and Transition model is presented below.

Productive and diverse upland plant communities of native species exist and are maintained.

Criteria for meeting Standard 3:

- composition
- structure
- distribution

State and Transition Models:

A **State** by definition includes one or more biological (including soil) communities that occur on a particular ecological site and that are functionally similar with respect to the three attributes. A number of different plant communities may be included in a state (p. 15 Tech Ref. 1734-6). For more detail see Bestelmyer et al. 2002. Shifts between states are referred to "**transitions**". Unlike community pathways (within a state), these "threshold" transitions are not reversible by simple altering the intensity or direction of factors that produced the change.

The **Reference State** is the state where the functional capacities represented by soil/site stability, hydrologic function, and biotic integrity are performing at a near optimum level under the natural disturbance regime. This state usually includes more than one community, one of which is know as the "*historic climax plant community*".

Healthy ecosystems generally allow various communities to fluctuate over time within a state. Transitions rarely occur in response to the natural disturbance regime. However, resistance and resilience alone are insufficient criteria for healthy ecosystems: degraded systems are often highly resistant to change. p. 16 Tech Ref. 1734-6).

7.0 Recommendations

Ash Peak (Allotment Management Plan) was established in 1970. The permittee has maintained base waters and fences in order to support a rotation grazing utilizing the allotments three pastures (County-Line, Ash Peak and Home).

The recommendation is to issue the 10-year grazing permit with existing terms and conditions.

8.0 Consultation

Permittee(s), interested public, state agencies, and other federal agencies where initiated by a letter on February 25, 2009 with a public meeting invitation on March 25, 2009. On August 3, 2009 the Standard and Guidelines evaluations were sent to the interested parties and comments were received from Western Watersheds Projects. Evaluations were sent out again for comments on June 12, 2012. Comments were received from Western Watersheds Project.
Section 7 Consultation occurred on the Gila District Livestock Grazing Program Biological Opinion (BO) for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (22410-2006-F-0414).

9.0 Selected Management Action

Implement the grazing and other management actions identified in 8.0 Recommendations.

Authorized Officer Concurrence:

___ I concur with the conclusions and recommendations as written.

___ I do not concur.

___ I concur, but with the following modifications.

_____ _____

Scott C. Cooke Date
Field Manager

10.0 Appendix A. Noxious weeds in Graham, Cochise, and Greenlee Counties

Noxious Weed Species Identified as Present by County[1]

	Noxious Weed Species Identified
Graham County	Malta starthistle, sweet resinbush, Karoo bush, Saharan mustard, buffelgrass
Cochise County	Russian knapweed, Malta starthistle, yellow starthistle, onionweed, Saharan mustard
Greenlee County	Russian knapweed, Malta starthistle, yellow starthistle, onionweed, whitetop, Saharan mustard, bull thistle

[1] From Kim McReyonolds (University of Arizona).

Herbicide Treatment. In 2010 BLM applied herbicide treatment to control creosote bush on the Ash Peak Allotment. This was part of the American Recovery and Reinvestment Act of 2009 (ARRA) resulting in funding and the subsequent herbicide treatment of woody invasive species[1] (EA# DOI-BLM-AZ-G010-2009-0069, Recovery-Vegetation Treatments: Reduction of woody invasive species on four sites within the Safford Field Office). The EA clearly states the purpose (*intent)* and anticipated *effect* from the treatment.

This project conforms with decisions in the Arizona Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management, 2003, Eastern Arizona Grazing EIS, 1986, Vegetation Treatments on BLM Lands in 13 Western States Programmatic Environmental Impact Statement, 1991, and Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS), 2007, and is therefore NEPA compliant.

Invasive species were analyzed in the EA and non-native species were monitored by U. of A. and BLM. BLM personnel involved in the herbicide treatment are both certified by U.S. Dept. of Interior in Ag Plant & Pest, Forestry, Rights-of-way and Aquatic pesticide application. Both have written herbicide EAs.

The Ash Peak Allotment was selected for the following reasons:
1. Precipitation (12")
2. Seed source. (perennial grasses were abundant).
3. Permittee was cooperative. This meant they would not graze the Home Pasture for two growing seasons (they actually rested it for three seasons).
4. Proximity to pronghorn populations and the potential to lure pronghorn to the Ash Peak Allotment should suitable habitat become available.
5. Overall good condition of the allotment based on the previous evaluations.

Herbicides treatments have greater success on well-managed allotments that have the proper soils, native vegetation seed sources, precipitation and management commitment. Ash Peak met all criteria.

As previously stated non-native species were not reported to occur on the Ash Peak Allotment by BLM or University of Arizona. There are invasive non-native species in the vicinity. The BLM is an active Stakeholder in the Southeastern Arizona Weed Management Area and the Southwest Vegetation Management Association Arizona Weed Management Area. The BLM and U.of A. have partnered in conducting Russian knapweed research in the Duncan, Arizona (McCloskey et al. 2009). The BLM also was involved in treating Russian knapweed in Duncan area (DOI-BLM-AZ-G010-2009-0065, Duncan Area Russian Knapweed Treatment Environmental Assessment) ostensibly to prevent Russian knapweed from entering the Gila Box. An EA and associated Pesticide Use Proposal (PUP) were both completed prior to any herbicide application, thereby satisfying NEPA.

[1] Invasive plants that are not part of (if exotic), or are a minor component of (if native), the original plant community or communities that have the potential to become a dominant or co-dominant species on the site if their future establishment and growth is not actively controlled by management interventions (*Interpreting Indicators of Rangeland Health*, Technical Reference 1734-6, 2005).

RUSSIAN KNAPWEED MANAGEMENT IN SOUTHWESTERN ABANDONED PASTURES. W. B. McCloskey*[1], K. McReynolds[2], E. Foster[3], D. Arthun[4]; [1]University of Arizona, Tucson, AZ, [2]University of Arizona, Willcox, AZ, [3]NRCS USDA, Safford, AZ, [4]BLM, Safford, AZ (58)

ABSTRACT

The efficacy of herbicide treatments on Russian knapweed was investigated in infested abandoned pastures in 2009 and 2010 in Kansas Settlement and Duncan in Southeastern Arizona. The experiments utilized a randomized complete block design; at Kansas Settlement plot size was 6.6 m by 58 m with three replications and at Duncan the plot size was 6.6 m by 12.2 m with four replications. A second, smaller experiment at Duncan was replicated 4 times with a plot size of 3 m by 6 m. The plots in Kansas Settlement and Duncan were subsampled 40 and 8 times, respectively, using either a 0.16 m square or 0.25 m square depending on the date to determine the density of Russian knapweed shoots. At Kansas Settlement, herbicides were applied on June 22, 2009 when the mean number of shoots was 11.8 green shoots/m^2 and on December 18, 2009 when the mean was 9.7 dormant shoots/m^2. The herbicides, aminopyralid at 87 and 122 g/ha, aminocyclopyrachlor plus chlorsulfuron at 70 plus 26 g/ha, respectively, and 140 plus 52 g/ha, respectively, picloram at 560 g/ha and chlorsulfuron at 93 g/ha were applied with a methylated seed oil at 1% v/v using a tractor mounted sprayer travelling at 3 MPH and TeeJet TT1103 nozzles at 25 PSI resulting in a carrier volume of 20 GPA. Russian knapweed shoots were counted again on May 13, 2010 and phytotoxicity was visually assessed on September 13, 2010. Russian knapweed shoot densities in the order of the herbicides listed above in plots treated on June 22, 2009 were 1.53, 0.80, 0.04, 0.07, 0.66, and 2.09 shoots/m^2 on May 13, 2010 compared to 14.6 shoots/m^2 in the untreated control 11 MAT (months after treatment). The corresponding visual phytotoxicity ratings on September 13, 2010 were 90, 94, 99, 99, 93, and 0% compared to the untreated control (0%) 15 MAT. Similarly, Russian knapweed shoot densities in the order of the herbicides listed above in plots treated on December 18, 2009 were 0.07, 0.0, 0.0, 0.0, 0.1, and 0.04 shoots/m^2 on May 13, 2010 compared to 14.6 shoots/m^2 in the untreated control 5 MAT. All of the herbicide treatments were statistically different than the untreated control plots but were not different from one another with the exception of the chlorsulfuron treatment where the Russian knapweed population recovered from the initial suppression. In the Duncan experiment, herbicides were applied on December 17, 2009 when the mean number of shoots was 37.7 shoots/m^2. The herbicides, aminopyralid at 87 and 122 g/ha and picloram at 560 g/ha were applied with a methylated seed oil at 1% v/v using a tractor mounted sprayer as described for the Kansas Settlement experiment. Russian knapweed shoot densities in the aminopyralid at 87 and 122 g/ha and picloram at 560 g/ha treatments were all 0.0 on May 14, 2010 compared to the untreated control density of 31 shoots/m^2. Similarly, the visual phytotoxicity ratings were 100% on June 29, 2010 compared to the untreated control (0%). In the smaller Duncan experiment, imazapyr was applied at 0.56 and 0.84 kg ae/ha with a CO_2 pressurized backpack sprayer using parameters similar to the tractor mounted sprayer on December 17, 2009 when the initial Russian knapweed stem density was 39 shoots/m^2.

The following spring the stem densities were 0, 0 and 68 shoots/m^2 in the imazapyr at 0.56 kg ae/ha, imazapyr at 0.84 kg ae/ha and the untreated control treatment, respectively. These data indicate the aminopyralid, aminocyclopyrachlor, picloram and imazpyr were all effective as dormant (i.e., preemergence) herbicide treatments for Russian knapweed during the winter of 2009-2010 in Southeastern Arizona. It should be noted that the 2009-10 winter was characterized by above normal rainfall, particularly in the spring. Additional herbicide treatments were applied in the spring of 2010 and all of the treatments applied to date will be reassessed again in 2011

11.0 Appendix B. Ground Cover,[1,2] Site # 2 (2005)

	Transect #2	Transect # 3
Bare Ground	23	32.2
Litter [3]	31[3]	27.2[3]
Rock (>3")	29	35.2
Gravel(.2 – 3")	14	
Vegetative Base	4	3.5

[1] Pace frequency.
[2] University of Arizona
[3] Persistent litter

12.0 Appendix C. Percent frequency [1,2] Site # 2 (2005)

	Transect #2	Transect # 3
Tobosa	28.5	42.1
Bush muhly	7.0	
Sideoats grama	2.0	
Black grama	2.5	

[1] Pace frequency.
[2] University of Arizona
[4] Canopy and basal

13.0 Appendix D. Percent composition [1,2] Site # 2 (2005)

	Transect # 2	Transect # 3
Tobosa	41.36	73.60
Bush muhly	6.11	
Sideoats grama	2.09	
Black grama	7.51	
Lehmann lovegrass		
Perennial forbs	.52	
Creosote[4]		
Mesquite[4]		7.4
Snakeweed	21.12	18.40
Brickellia		

Catclaw acacia	17.10	
Whitethorn		

[1] Pace frequency.
[2] University of Arizona

14.0 Appendix E. Stocking Rate

Stocking rate is defined by the Society for Range Management as the amount of land allocated to each animal unit for the grazable period of the year. Holechek (1988) viewed numerous stocking rate studies and found a harvest coefficient[1] of 35% was suitable for semi-arid rangelands.

However, after reviewing available research these authors feel a 25% harvest coefficient(25% of the forage to livestock, 25% to wildlife and natural disappearance and 50% for site protection) is a sound idea for most western rangelands (Galt et al. 2000). In summary Galt et al. (2000) felt the 25% harvest coeffient allows both forage species and livestock to maximize their productivity, allows for error in forage production estimates, greatly reduces problems from buying and selling livestock, reduces the risk of financial ruin during drought years, and promotes multiple use values. Unused forage in wet years provides a reserve of forage for drought and increases plant vigor and soil water infiltration. New Mexico research shows conservative (35% use of primary forage species) stocked rangelands produced nearly 50% more forage than moderate (43% use of primary forage species) stocked rangelands in drought years. Conservative stocking is a term commonly used by range researchers to define a level of grazing between light and moderate, generally involving about 35% use of forage (Holechek et al.2001).

[1] Harvest coefficient is the percentage of total forage produced that is assigned to grazing animals for consumption.

Stocking rate on Ash Peak:

12,145 acres, 92 AU, with 960 AUMs
12,145/92 = 132 acres per AU
900 pound cow @ .02 body weight = 18 pounds per day (365) = 6570 pounds per year
6570 pounds/132 acres = 49 pounds per acre
12,145/640 acre/section = 19 sections, 4.84 AU/section
49 pounds per acre/.25 (harvest coefficient of 25%) = 196 pounds per year biomass/year/acre
49 pounds per acre/.40 (BLM utilization 40%, (Safford District RMP, EIS (Final) 1991) = 123 pounds per year biomass/year/acre

12,145 + 640 = 12,785 acres total (public and private)
Assume 25% unavailable due to slope, therefore 12,785(.75) = 9588 acres
Assume 1/3 rested..so 9588(.67) = 6424 acres
We know we need 6570 lbs. per AU per year

6570(92 AU) = 604,440 total lbs of forage required
604,440/6424 acres = 94 lbs per acre
94/.4 = 235 lbs per acre
94/.25 = 376 lbs per acre

Based on BLM guidelines stocking rates are reasonable.

5-24-2013:

6424 acres/92 cows = 70 acres / cow => 70 acres (800 #) / acre = 56,000 # / AU
56,000 # (.25) = 14,000 # (not all 14,000# is available forage)
900 # cow (.02) (365) = 6570 # …7430 # residual (14,000 – 6570 = 7430)
1100 # cow (.02) (353) = 8030 # …5970 # residual
1300 # cow (.02) (365) = 9490 # …4510 # residual

1050 pound average per brood (mother) cow (personal communication with Permittee, 5-28-2013)

1050 (.02) 365 = 7665 pounds of forage required.

70 acres (800 # / acre) = 56,000 # production => 7665 / 56,000 = .14 (14 % of all biomass)

90 acres (800 # / acre) = 72,000 # production => 7665 / 72,000 = .11 (11 % of all biomass)

Volcanic Hills = 1020 lb. / acre representative value => 800 # grass, 60# forb, 150 # shrub 10 # tree. 800 + 60 + 150 (.5) = 935 # forage / acre.

Limy = 25 # forage /acre (based on the April 2013 visit, this value would be higher).

1020 (.8) = 800 # [80% of allotment] we haven't counted the limy uplands (1/3 rested).

[90 acres (935 # / acre) = 84,150 total forage pounds => 7665 / 84,150 = .09 (9 %)

90 acres (800) = 72,000 => 7665/72,000 = 11% use
70 acres (800) = 56,000 => 7665/56,000 = 14% use

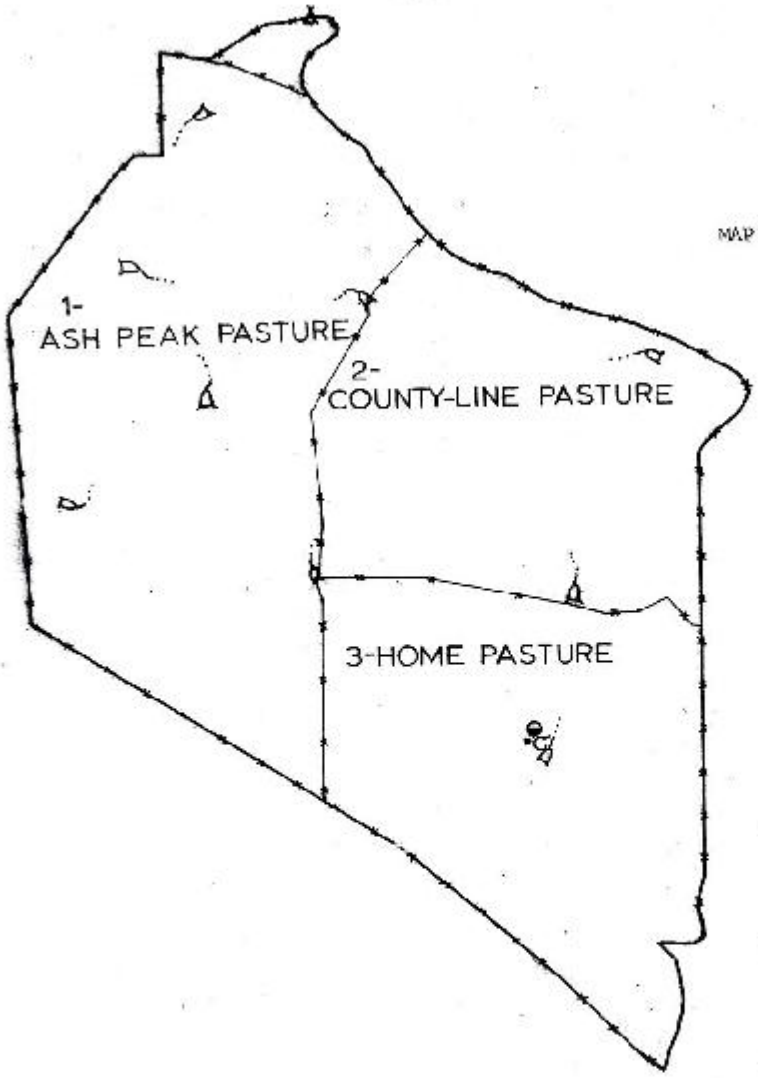
Current stocking rate = 6424 /71 => 90 acres / cow

Based on information 28 May 2013 stocking rate appears reasonable.

15.0 Appendix F. Grazing Plan

Pasture	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ash Peak												
County												
Home												

Green = Rest



RANGE IMPROVEMENT and PASTURE OVERLAY

EXISTING IMPROVEMENTS

Fence
Reservoir
Corral
Well
House

PROPOSED IMPROVEMENTS

Fence
Reservoir

Out-of-Date 11/13/69

BLM ID Team and George Cox (permittee).

Appendix VII. University of Arizona 2013 monitoring data.

Site Class: BLM || Gila || Safford || Ash Peak (5105) || Ash Peak **Site ID:** 2

% Ground Cover	Quadrat Size:	
Category	Transect	
	05/02/05	04/03/13
Bare Ground	23	9
Gravel (1/4" - 3")	14	21
Litter	31	44
Live Basal Veg.	4	3
Rock > 3"	29	24

Southeast Arizona Rangeland Monitoring Program

Site Class: BLM || Gila || Safford || Ash Peak (5105) || Ash Peak **Date:** 4/4/2013

Site ID: 3 **Examiner(s):** AB

% Ground Cover

Species	Transect (#Hits)					% Cover*
	1	2	3	4	Total	
Bare Ground	45	23	30	18	116	19.33
Gravel (1/4" - 3")	2	9	9	5	25	4.17
Litter	52	82	75	73	282	47.00
Rock > 3"	41	32	26	46	145	24.17
Live Basal Veg.	10	4	10	8	32	5.33

Fetch

n	100	Minimum	0
Maximum	79	Median**	7.00
Mean	11.48	SE	3.26
Asymmetry	6.85		

% Frequency 40x40 cm **DWR Wt. Composition** Sample Size = 100

Species		Transect (#Hits)					% Freq*	Rank (#Hits)			Wtd. Sum	% Comp.*
		1	2	3	4	Total		1	2	3		
Woody Species												
Lycium pallidum-canopy	LYPA	1				1	0.50					
Lycium pallidum	LYPA							1	1		9	0.9
Grasses - Perennial												
Aristida	ARIST		1			1	0.50	1	1	1	10	1
Muhlenbergia porteri	MUPO2			1		1	0.50					
Pleuraphis mutica	PLMU3	29	33	29	30	121	60.50	88	87	73	863	86.3
Forbs - Perennial/Biennial												
Hoffmannseggia glauca	HOGL2	1	2	1	2	6	3.00	2	2	3	21	2.1
Annuals												
Annual forb(s)	AAFF	36	43	39	42	160	80.00					
Annual grass(es)	AAGG	20	28	36	31	115	57.50					
Unclassified												
Prosopis	PROSO	1		2	2	5	2.50	8	9	23	97	9.7
Prosopis-canopy	PROSO	6	10	8	7	31	15.50					

* Number of decimal places does not imply level of precision
** Plot median = average transect median, not the median of all plot data

Site Class: BLM || Gila || Safford || Ash Peak (5105) || Ash Peak **Site ID:** 3

% Frequency	Quadrat Size: 40x40 cm	
Species	Transect	
	05/02/05	04/04/13
Woody Species		
Gutierrezia sarothrae	10	
Gutierrezia sarothrae-canopy	5	
Lycium pallidum-canopy		1
Grasses - Perennial		
Aristida		1
Muhlenbergia porteri		1
Pleuraphis mutica	42	61
Forbs - Perennial/Biennial		
Hoffmannseggia glauca		3
Annuals		
Annual forb(s)	99	80
Annual grass(es)	34	58
Unclassified		
Haplopappus	1	
Haplopappus-canopy	1	
Prosopis	1	3
Prosopis-canopy	9	16

Site Class: BLM || Gila || Safford || Ash Peak (5105) || Ash Peak **Site ID:** 3

% Ground Cover	Quadrat Size:	
Category	Transect	
	05/02/05	04/04/13
Bare Ground	32	19
Gravel (1/4" - 3")	2	4
Litter	27	47
Live Basal Veg.	3	5
Rock > 3"	35	24

Southeast Arizona Rangeland Monitoring Program

Site Class: BLM || Gila || Safford || Ash Peak (5105) || Ash Peak **Date:** 4/3/2013

Site ID: 4 **Examiner(s):** AB, JE

% Ground Cover

Species	Transect (#Hits)					% Cover*
	1	2	3	4	Total	
Bare Ground	15	8	4	7	34	5.67
Gravel (1/4" - 3")	23	18	18	21	80	13.33
Litter	105	104	99	111	419	69.83
Rock > 3"	7	17	25	10	59	9.83
Live Basal Veg.		3	4	1	8	1.33

% Frequency 40x40 cm **DWR Wt. Composition** Sample Size = 100

Species		Transect (#Hits)					% Freq*	Rank (#Hits)			Wtd. Sum	% Comp.*
		1	2	3	4	Total		1	2	3		
Woody Species												
Acacia angustissima	ACAN		1			1	0.50	1		3	10	1
Acacia angustissima-canopy	ACAN		3			3	1.50					
Acacia greggii-canopy	ACGR	1		9	6	16	8.00					
Acacia greggii	ACGR							10	12	16	110	11
Gutierrezia sarothrae	GUSA2		1			1	0.50	1	1	1	10	1
Koeberlinia spinosa	KOSP				1	1	0.50					
Larrea tridentata	LATR2			1		1	0.50	7	8	11	76	7.6
Larrea tridentata-canopy	LATR2	3		1	6	10	5.00					
Opuntia	OPUNT			1		1	0.50	7	6	4	65	6.5
Opuntia-canopy	OPUNT	2	4		2	8	4.00					
Yucca elata	YUEL			2		2	1.00	7	7	5	68	6.8
Yucca elata-canopy	YUEL	1	3	1		5	2.50					
Grasses - Perennial												
Aristida	ARIST		2	4	1	7	3.50	7	7	5	68	6.8
Bothriochloa barbinodis	BOBA3		1	1	1	3	1.50	2	2	3	21	2.1
Bouteloua eriopoda	BOER4	5	7	8	12	32	16.00	33	29	26	315	31.5
Digitaria californica	DICA8		3		1	4	2.00	4	3		34	3.4
Eragrostis lehmanniana	ERLE	1	2			3	1.50	1		2	9	0.9
Muhlenbergia porteri	MUPO2	3	1	1	3	8	4.00	6	7	1	57	5.7
Tridens pulchellus	TRPU10	2				2	1.00	2	2	2	20	2
Forbs - Perennial/Biennial												
Sphaeralcea	SPHAE		2			2	1.00		2	1	5	0.5
Annuals												

Southeast Arizona Rangeland Monitoring Program

Site Class: BLM || Gila || Safford || Ash Peak (5105) || Ash Peak **Date:** 4/3/2013

Site ID: 2 **Examiner(s):** AB, JE

% Ground Cover						
Species	Transect (#Hits)					% Cover*
	1	2	3	4	Total	
Bare Ground	18	9	18	9	54	9.00
Gravel (1/4" - 3")	28	23	36	37	124	20.67
Litter	65	80	54	65	264	44.00
Rock > 3"	33	33	39	37	142	23.67
Live Basal Veg.	6	5	3	2	16	2.67

Fetch			
n	100	Minimum	0
Maximum	77	Median**	10.5
Mean	14.83	SE	5.17
Asymmetry	4.32		

% Frequency							40x40 cm	DWR Wt. Composition				Sample Size = 101
Species		Transect (#Hits)					% Freq*	Rank (#Hits)			Wtd. Sum	% Comp.*
		1	2	3	4	Total		1	2	3		
Woody Species												
Acacia greggii	ACGR				2	2	1.00	5	6	9	56	5.54
Acacia greggii-canopy	ACGR	4	2	2	9	17	8.50					
Gutierrezia sarothrae	GUSA2	1	2	3	1	7	3.50	5	6	6	53	5.25
Koeberlinia spinosa	KOSP			1		1	0.50			2	2	0.2
Koeberlinia spinosa-canopy	KOSP			1	3	4	2.00					
Grasses - Perennial												
Aristida	ARIST			4	3	7	3.50		1	5	7	0.69
Bouteloua curtipendula	BOCU				1	1	0.50	1	1		9	0.89
Bouteloua eriopoda	BOER4	6	2	7	8	23	11.50	18	15	8	164	16.24
Muhlenbergia porteri	MUPO2	6	6	11	16	39	19.50	28	28	29	281	27.82
Pleuraphis mutica	PLMU3	11	20	8	11	50	25.00	44	44	42	438	43.37
Annuals												
Annual forb(s)	AAFF	6	3	11	14	34	17.00					
Annual grass(es)	AAGG	47	49	50	41	187	93.50					
Unclassified												
Ephedra-canopy	EPHED				1	1	0.50					

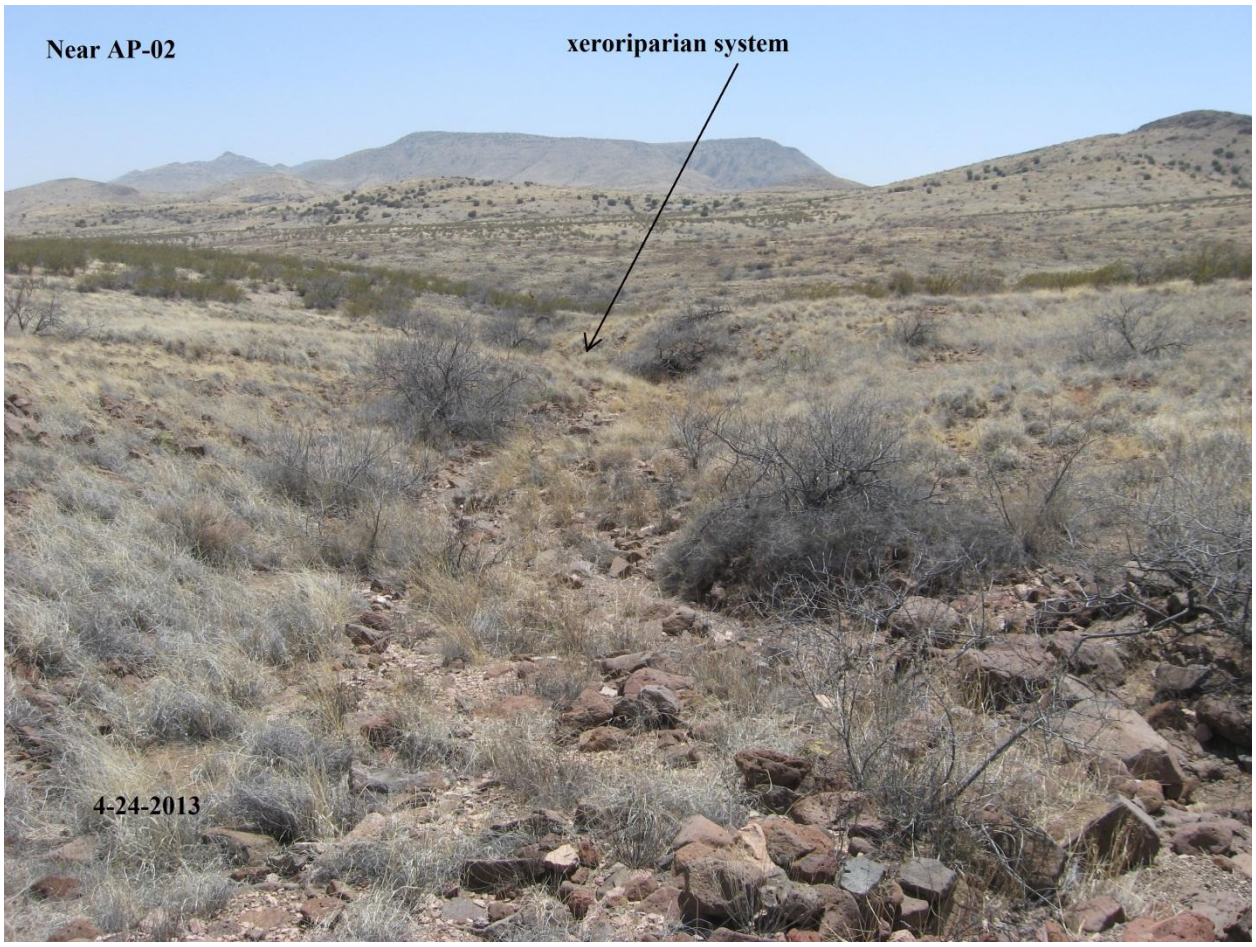
* Number of decimal places does not imply level of precision
** Plot median = average transect median, not the median of all plot data

Site Class: BLM || Gila || Safford || Ash Peak (5105) || Ash Peak **Site ID:** 2

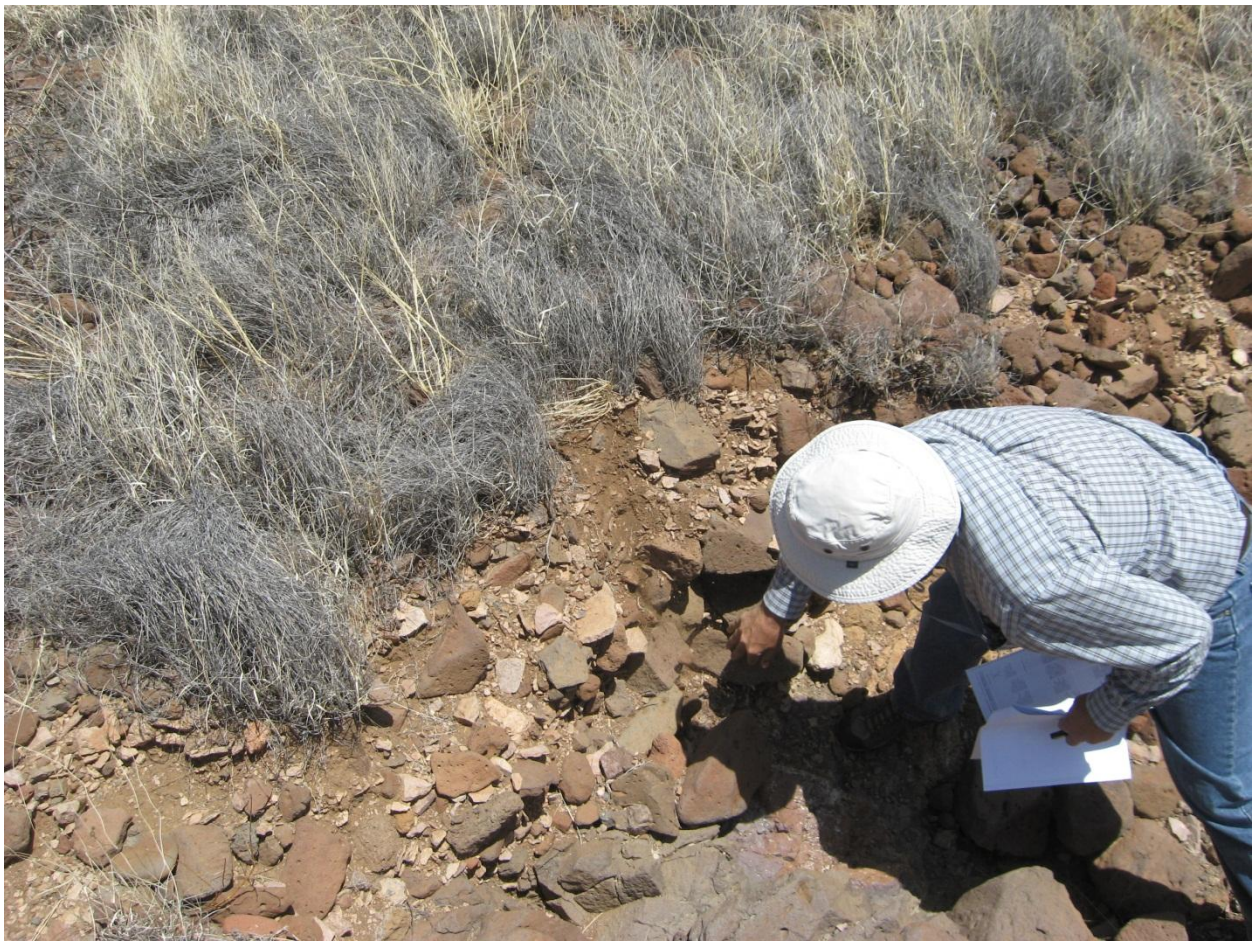
% Frequency	Quadrat Size: 40x40 cm	
Species	Transect	
	05/02/05	04/03/13
Woody Species		
Acacia greggii-canopy	10	9
Acacia greggii		1
Echinocereus	1	
Gutierrezia sarothrae	7	4
Gutierrezia sarothrae-canopy	12	
Koeberlinia spinosa	1	1
Koeberlinia spinosa-canopy	1	2
Grasses - Perennial		
Aristida	1	4
Bouteloua curtipendula	2	1
Bouteloua eriopoda	3	12
Muhlenbergia porteri	7	20
Pleuraphis mutica	29	25
Forbs - Perennial/Biennial		
Sphaeralcea	2	
Annuals		
Annual forb(s)	98	17
Annual grass(es)	2	94
Unclassified		
Ephedra-canopy		1

Appendix VIII. 2013 RHA Pictures:

Hydrologist Bill Wells and Recreation Ranger Brian Brinkley discuss RHA evaluation at Ash Peak (AP-02) 2013.



Looking south near AP-02.



Hydrologist Bill Wells examines soil profile at Ash Peak (AP-02) 2013.

Ash Peak monitoring site (AP-02), April 2013.

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